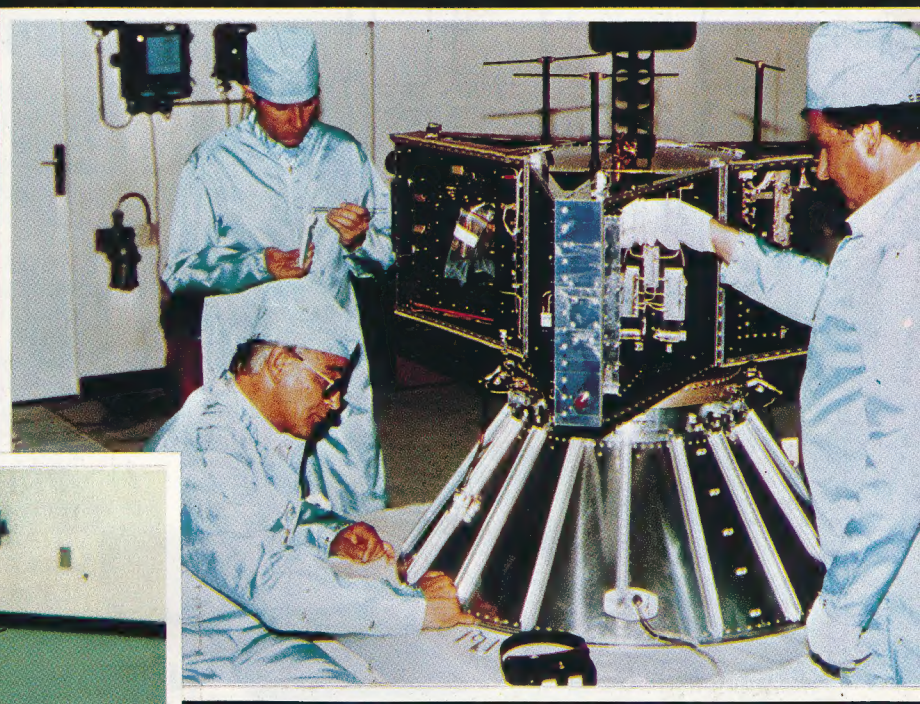
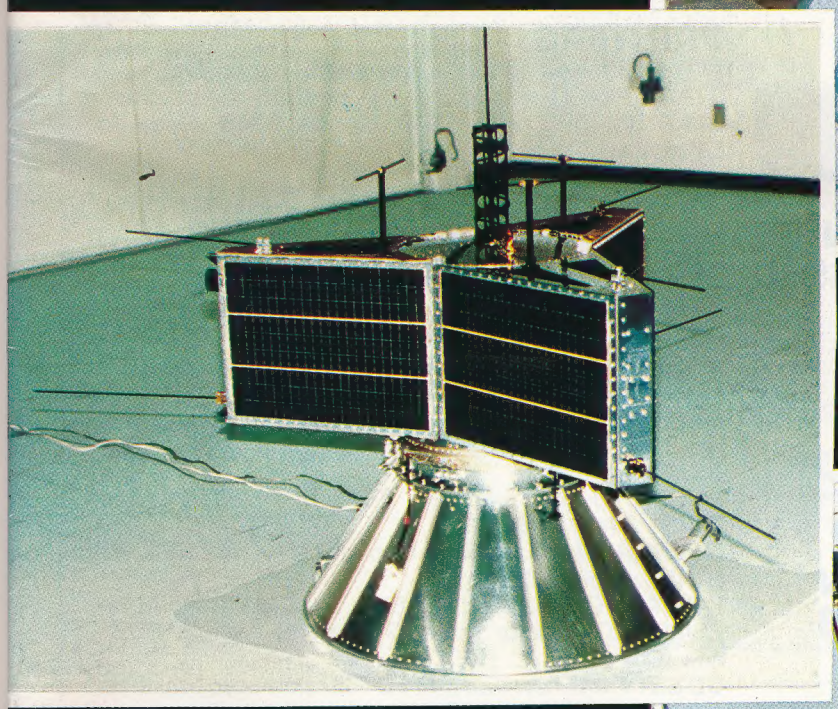
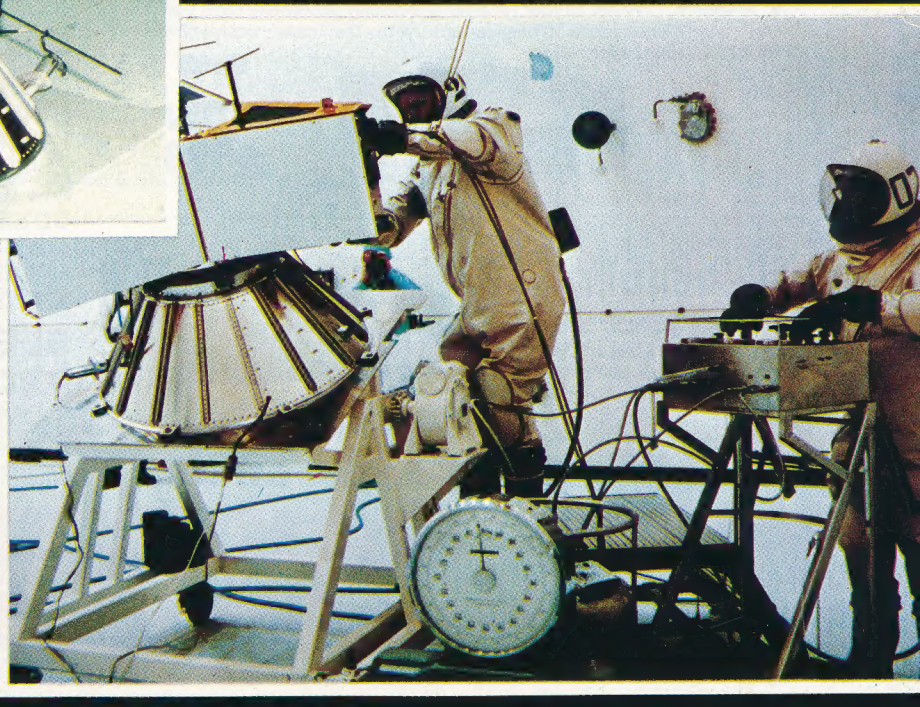
AMATEUR RADIO

VOL 52, No 3, MARCH 1984

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA







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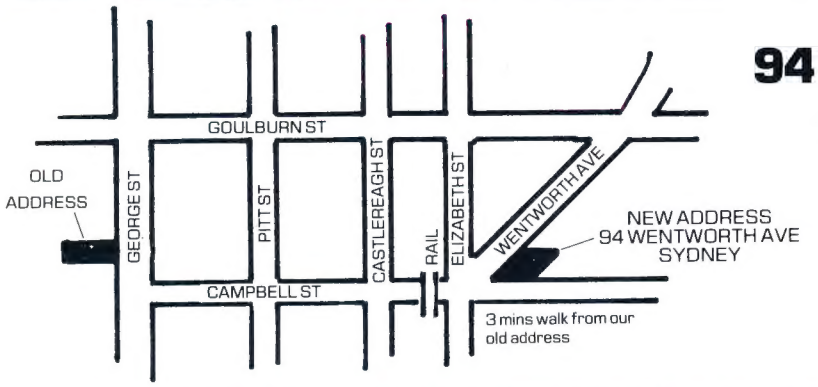

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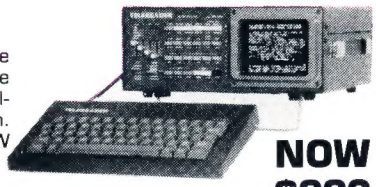

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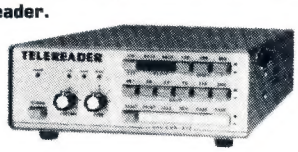

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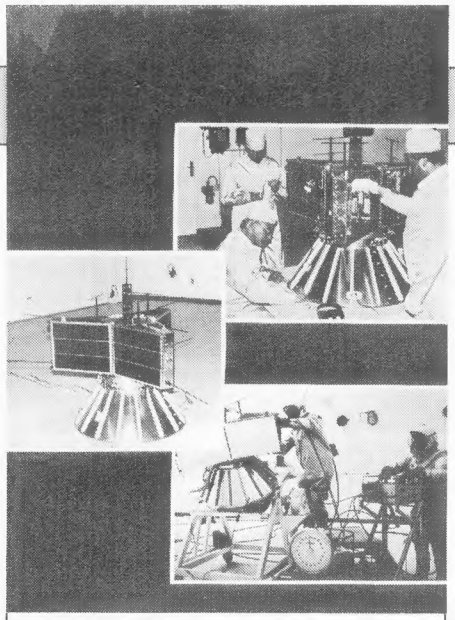

Oscar 10 photographs featuring the finished spacecraft at Kourou, loaded and ready to mount on the Launcher, Wolfgang Mueller MBB Engineer and Dick W4PUJ (right) loading the spacecraft with hazardous propellants and the final preparations with Jan W3GEY (upper left), Konrad Mueller (left) and Werner DJ4KQ (right). Konrad and Werner are both of AMSAT-DL.

AMATEUR RADIO

VOL 52, No 3, MARCH 1984

Published monthly as the official journal by the Wireless Institute of Australia, founded 1910. ISSN 0002 — 6859. Registered Office: 3/105 Hawthorn Road, Caulfield North, Vic. 3161. Telephone: (03) 528 5962.

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All copy for May AR must arrive at PO Box 300, Caulfield South, Vic 3162 at the latest by the 23rd March 1984.

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Typesetting by: QUADRICOLOR INDUSTRIES PTY LTD,
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Photographic film and processing material courtesy AGFA-GEVAERT LTD AUSTRALIA

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a word from your EDITOR

March brings the Federal Convention of the Institute barely a month away. The Federal Convention sets the policy for the Institute. To do this effectively members must raise matters to be discussed initially with their divisions.

One matter being discussed is the relative needs and compatibility of CW operation and the various RTTY systems. At the 1983 convention the term Narrow Band was agreed upon. As can be seen from the letters and other discussions there is considerable debate on this issue. You should make your views known to your division.

Similarly any other matters, needed privileges, etc should be raised and discussed now. Your input is needed. The Institute is what you, the member, makes it.

Of particular interest to the Editor and the Publications Committee are the present and future direction of Amateur Radio. The balance and content of the magazine needs thought. Bear in mind though that increased content will ultimately be reflected in the price of subscriptions.

The magazine needs a steady supply of material. In paticular good short technical articles are needed. Longer technical articles are also most welcome but require much greater effort.

Whilst articles on advanced and new techniques are needed the basic and novice orientated article is always welcome as what may seem very simple and fundamental to an OT are still eagerly sort after by a newcomer. Computer applications in amateur radio are very welcome.

Amateur Radio has an enormous appetite for material. Like ourselves, it must have a varied and well balanced diet. Take the time and write up a project that has worked for you. Don't overlook a photograph either.

Letters to the Editor are welcome but please be as brief and concise as possible. A short, well planned letter will be more effective. Many recent letters have had to be pruned. A far better alternative is to make your letter short and to the point.

Gil Sones VK3AUI
Editor
AR

QSP

Every activity needs new blood to grow — and our hobby of amateur radio is no exception.

We were perhaps spoilt by the CB boom of the 1970s which coupled with the introduction of the Novice Licence resulted in a considerable number of CBers joining our ranks.

However in 1984 the WIA has to actively interest and attract people to amateur radio to prevent the hobby going into a decline.

This doesn't mean we still don't encourage CBers to take out an amateur licence — but the reality is that the number of CB operators has fallen and therefore this potential source of new radio amateurs has dwindled.

Our horizons must widen to exploit all possible sources of new blood — this means all age groups from nine to ninety, the abled and disabled, and both sexes.

A feature article which appeared in New Idea magazine late last year resulted in a number of women writing to Australian Ladies Amateur Radio Association (ALARA) saying they had not heard of the hobby or that women could be involved until reading the article.

This tapped but one source of potential radio amateurs — there are many others.

Getting information into secondary schools such as the latest WIA leaflet "Amateur Radio — The Hobby For Everyone" would certainly attract the curiousity of students and teachers leading to some of them joining the hobby.

The scouting movement and youth clubs are other potential areas to be targetted with information on amateur radio.

Retired persons or people with retirement in the near future are looking for a leisure activity — and what better than our hobby.

As an individual WIA member you may know a friend, neighbour, relative, or workmate who has shown some interest in amateur radio — why not make 1984 the year you actively encourage someone to study for their own licence.

If amateur radio means something to you personally — share your enjoyment and experiences with others so they may learn of our unique hobby and hopefully want to get involved themselves.

Jim Linton VK3PC
Victorian WIA President
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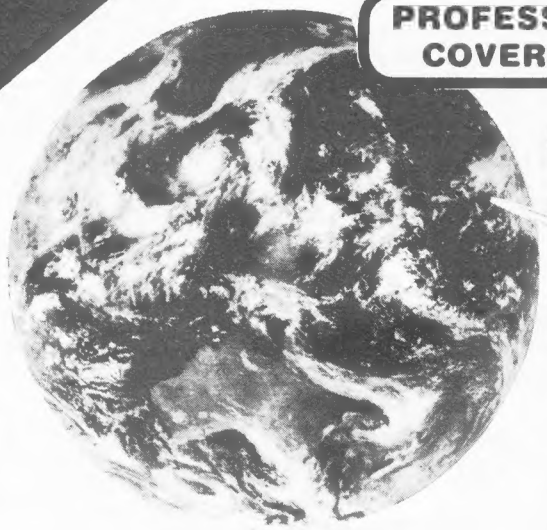

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WIA NEWS

PHONE PATCH

On 11th January the Executive met with members of Telecom Management to discuss amateur involvement with Phone Patch. The Executive stressed the non-commercial basis of the hobby and argued that amateur use of phone patch would increase Telecom's revenue. A letter, covering copies of the relevant pages of the Amateur Operators Handbook, which show the non-commercial requirements of the hobby, has been sent as a follow up to the meeting, to support the Executives view. It is hoped that in the light of the discussions and documentation that Telecom will amend its charges to the amateur fraternity.

TELEVISION SPACING STANDARD

The Minister of Communications, Mr H Duffy, in a press release dated 22nd December 1983 announced that the official standard of 8 MHz spacing for the carriage of television signals in the UHF bands would be changed to 7 MHz.

The VHF band was becoming congested and as a result the UHF band would increasingly be used in Australia for the future expansion of television services.

BOCP

A recent edition of Amateur Radio magazine carried an article concerning DOC's intention to cease Broadcast Operator's Certificate of Proficiency (BOCP) examinations at the end of last year.

All should note that due to the difficulty in arranging for the conduct of BOCP examinations by other institutions by the planned timescale of 1984, the Department will continue to conduct them until the end of 1984. The Department will definitely cease this activity by 31st December 1984, as arrangements in hand are expected to be completed well before that date, allowing transfer to other institutions by 1985.

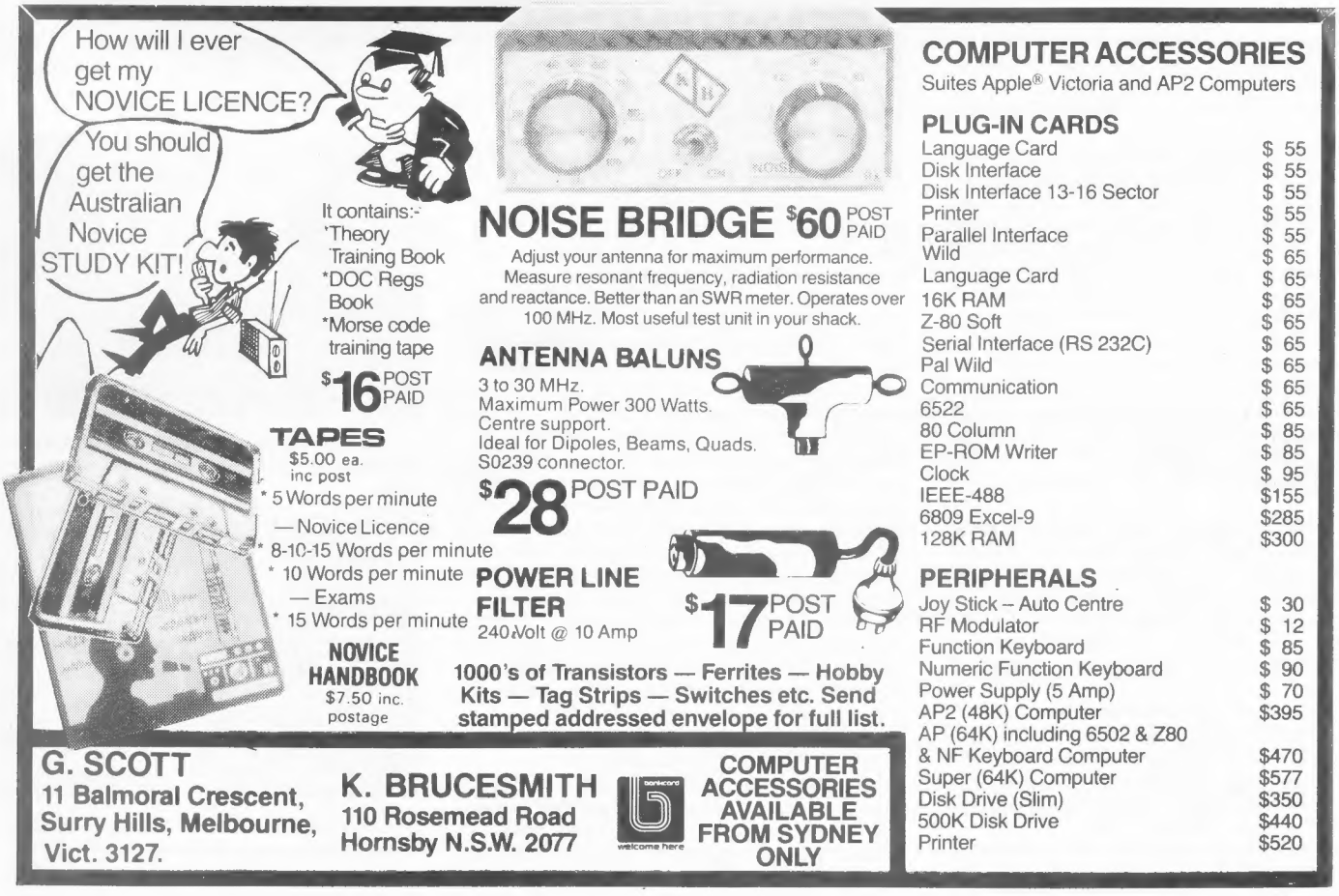
NEW CALLSIGNS

New blocks of amateur station callsigns have now been reserved for use by Australian amateur stations.

The callsigns and classes of amateur stations concerned are as indicated hereunder:

Full Amateur:	*VK*FAA — VK*FZZ*
Limited Amateur:	*VK*TAA — VK*TSZ and VK*TUA — VK*TZZ*
Novice Amateur:	*VK*MAA — VK*MZZ*
Combined Limited/ Novice:	*VK*JAA — VK*JZZ*

* *Indicates State numeral*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THE EXPERIMENTAL AMATEUR

SATELLITE TRACKING 2

Lindsay Lawless, VK3ANJ
Box 112, Lakes Entrance, Vic 3909

The first article* showed how observations of time of passage could be used to estimate the time of appearance and orbital period of a satellite. From the example UO9 data the approximate period was 94 mins and the time of appearance about 19 mins earlier each day. We can refine these estimtes by using a larger number of observations.

There are 1440 minutes in a mean solar day (look up the meaning of that if you haven't used it before) therefore the UO9 satellite completes about 1440/94 orbits in a day; this is approximately 15.3. Because similar observations will be a whole number of orbits apart the satellite will have completed 122 (8 x 15.3) in the time elapsed between the first observation of 0635 on 19/5 and the last at 0706 on 27/5. This time is eight days and 32 minutes or 1155 minutes; divide this by 122 gives a better estimate of the period — 94.68 minutes. The satellite will complete 15 x 94.68 orbits in 1420.35 minutes which is 19.8 minutes short of a full day. This is reasonable evidence that our estimates are not far off the truth and we can use them with confidence for the time being. We can't be dogmatic about them because orbital characteristics change with time and a later group will yield different results.

Satellite orbits are elliptical and the semi-major axis of the ellipse can be calculated if the orbital period is known. Also other relevant information can be derived from this basis. (Switch on your pocket scientific calculator.) The semi-major axis of an elliptical orbit is the cube root of the square of the period multiplied by 6031 or in shorthand $a=(6031T)^{2/3}$ kilometres. Amateur satellites have very nearly circular orbits (a circle is an ellipse with the major and minor axis equal) therefore the semi-major axis is near enough equal to the radius of the orbit. The average velocity of the satellite is 2π a/T — the circumference of the orbit divided by the period.

Our sample satellite has a calculated semi-major axis of 6884 kilometres and an average velocity of 27 494 kilometres per hour, 457 kilometres per minute, 7.6 kilometres per second. It is of interest to note that the velocity in a circular orbit is constant and in an elliptical orbit it varies being greatest at "perigee".

To listen to UO9 it is necessary to search the frequency range 145.829 to 145.821 MHz. My log shows the longest pass covered the frequency range 145.828.6 to 145.821.4 MHz. This confirms the calculation of orbital speed at 7.6 kPS approximately; why?

The maths gets a little more complex at this point but still within the capabilities of the pocket calculator. Look at Fig 1.OS is the distance from the satellite to its geometrical horizon at the Earth's surface. The distance to the visual and radio horizon is greater than OS because of refraction of electromagnetic waves by the atmosphere (see ARRL handbook and other references to "line of sight" propagation). OX is the "great circle" distance from the sub-satellite point to the horizon and this distance in nautical miles is numerically equal to the angle Ø in minutes. XS is the height of the satellite above the Earth's surface.

$$XS = a - R$$
$$OS = (a^2 - R^2)^{1/2}$$
$$Ø = \cos^{-1} R/a$$

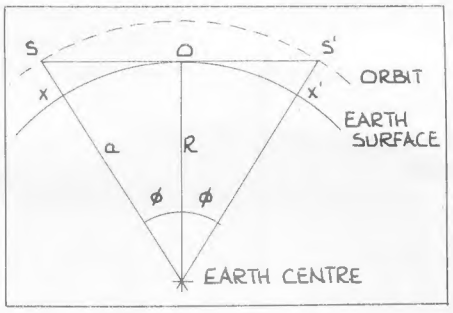


Fig 1.

The satellite will "illuminate" a circle on the Earth's surface with radius OX. This "illuminated" circle travels with the satellite and knowing its location at any time provides an estimate of the locations which are most likely within VHF range of the satellite. The "illumination time" will depend on how far off centre a station is located. It will be on centre only for overhead passes and the illumination time for an overhead pass is 2Ø/360 x T mins.

Knowing the time that the "illumination" circle comes within range of your location and its radius allows an estimate of the time available for listening to the satellite transmissions and for communicating via the satellite to other amateurs. The approximate maximum time for UO9 is 12 minutes but very few orbits will be as long as this for two main reasons. A listener located at point 0 (Fig 1) will need to have a receiving system capable of receiving at zero angle to the horizon and eliminating atmospheric and other noise at this low angle. Also as stated earlier the maximum "in range" time occurs only on overhead passes. The satellites transmitting on 10 metres will provide greater listening times because of propagation other than via the direct path, but "uplink" VHF will be limited to angles above 0° — in practice above 5° to 10°. (There is scope here for someone to devise a method for checking the low angle capabilities of aerial sites and systems using satellites.)

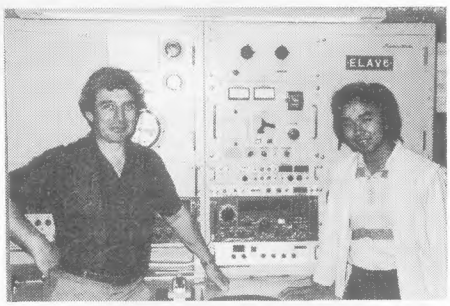
We can derive other orbital parameters from the basic data collected by the methods described. Also there is another source — the recording of the "Doppler" effect frequency changes as the satellite approaches and recedes. The basic parameters are of course published regularly in the literature and these are much more accurate but deriving these for oneself is as interesting as equipment "homebrewing" and just as informative. The next article will deal with Doppler effect observations and the information which can be derived from these.

* *Experimental Amateur — February AR, page 7.*

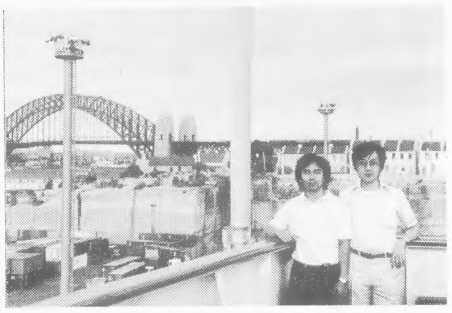
AR

Amateurs Visit Sydney

Recently whilst the cargo ship "Mosman Star" was in Sydney two amateurs on board took time out to meet some local amateurs.



L to R: Arthur VK2DUW and David VS6XNB in the Radio Room of the Mosman Star.



L to R: David VS6XNB and John VS6GP check out Sydney Harbour.

AR

Photos by David VK2EDY

TIME AND FREQUENCY SERVICES IN THE USSR

For operation of artificial satellites, location of ships at sea or aircraft in flight, TV and radio broadcasting and other everyday activities, exact standards of time and frequency are necessary. Today's level of science and technology provides users with highly accurate time and frequency transmissions. To fulfill these needs in the USSR, the state time and frequency service (GSVCh) is responsible.

The service began in the early years of Soviet rule, when in 1920 the Petrograd radio station "New Holland" began regular time signal transmissions, based on astronomical clocks at the Pulkovo Observatory. In June 1924 SOVNARKOM took over the service, broadcasting bulletins with timetables of accurate time signals for domestic and foreign radio stations.

The error in the transmitted signals at that time comprised a few hundredth parts of a second. During WWII the service supplied the needs of the armed services on land, sea and air.

In the development of this area of technology, significant steps were the formation in 1948 of the Unified Time Service Commission and the Central Scientific Time Bureau (now the All-Union NII Physical, Technological and Radiotechnical Measurement Institute, or VNIIFTRI).

In 1952 the broadcasting of time signals became common on shortwave and longwave radio stations with specialised automatic apparatus, working from high accuracy quartz clocks. This was a significant advance in accuracy and reliability of the transmissions. During this period, there was intense development of time and frequency standards, to solve important questions — such as how to provide for uniform measurement needed for ground based and cosmic navigation, geodesy, radio astronomy, communications and other areas of science and technology. The results of these efforts was the transmission by GSVCh radio stations of signals using a worldwide astronomical time scale (UT 1), the variation in which was estimated as a few units by 10^{-8}. During this time the VNIIFTRI created the State Primary Standard of time and frequency, with an error of reproduction in the order of 5×10^{-12}.

STATION	LOCATION	POWER kW	CARRIER FREQ KHz	OPERATING HOURS	TRANSMISSION BREAKS DAY	TIME (MST*)	RECEPTION ZONE	SIGNAL ACCURACY
RVM	MOSCOW	5	4 996	24	1st Wed in 1st month of each quarter	0800-1600	20° E-60° E	5×10^{-11}
		5	9 996	24	2nd Wed in 1st month of each quarter			
		8	14 996	24	3rd Wed in odd-numbered months			
RID	IRKUTSK	1	5 004	24	2nd & 3rd Mons each month	0300-1100	120° E-170° E	5×10^{-11}
			10 004	24	3rd Mon & Tues each month			
			15 004	24	2nd & 3rd Mons each month			
RTA	NOVOSIBIRSK	5	10 000	20.5	1st & 3rd Tues each month	0300-1300	20° E-60° E	5×10^{-11}
			15 000	20.5	1st & 3rd Tues each month			
RTsKL	TASHKENT	1	2 500	21	3rd Mon each month	0400-1400	60° E-80° E	5×10^{-11}
			5 000	21	3rd Mon each month			
			10 000	21	3rd Mon each month			
RV-166	IRKUTSK	40	200	23	last 3 Mons each month	0300-1200	within 600 km radius	5×10^{-12}
RV-76	NOVOSIBIRSK	40	272	22	1st, 2nd & 4th Tues each month	0600-1330	within 600 km radius	5×10^{-12}
RBU	MOSCOW	10	66.6	24	3rd Tues every even-numbered month	0800-1600	20° E-60° E	5×10^{-12}
RTZ	IRKUTSK	10	50	23	1st, 3rd & 4th Mons each month	0300-1100	120° E-170° E	5×10^{-12}

* MST = MOSCOW STANDARD TIME

In constructing the Primary Standard, quantum mechanical frequency standards were used, allowing reproduction of time intervals with incomparably higher accuracy than obtainable with astronomical determinations. The Atomic second was adopted for measurement of uniform moments of time. Up until 1956, the second had been defined as 1/86 400th part of the mean solar day, derived from the rotation of the earth on its axis. Then for higher accuracy, the astronomical definition was revised to be defined by the earth's period of revolution around the sun. Therefore in 1956 the second was defined as 1/31 556 925.9747th part of the tropical year. This was known as the Ephemeris second, the accuracy of which approached $2 - 5 \times 10^{-9}$.

Rapid developments in science and technology requiring accurate definition of the second led to the substitution of the Ephemeris second by the Atomic second. In October 1967, on the recommendation of the 13th International Federation for Weights and Measures, the Atomic second was defined as the interval of time in which there occur 9 192 631 770 oscillations corresponding to the frequency of transition between two hyperfine energy levels in the caesium-133 atom, in a conventional unpeturbed magnetic field. To obtain the Atomic second special caesium time and frequency standards are used. These are unique radio-electronic apparatus allowing reproduction of moments of time with 100 000 times greater accuracy than by astronomical observations. As well as caesium standards, hydrogen, rubidium and others are used.

Transition to the Atomic second did not pass over the necessity for the widely useful Ephemeris second and the worldwide time scales (UT 1 and UT 2) based on it. Ephemeris time is necessary for astronavigation, cosmonautics and resolution of other scientific and technical problems. This led to the acceptance of the international coordinated Atomic time scale UTC. In this scale worldwide time is calculated by making small adjustments of a second whenever the difference between the Atomic and astronomical time scales reaches a magnitude of more than 0.9 seconds.

The standard time base in the USSR consists of the State Primary Standard and a group of secondary standards located in different cities around the country. The State Primary Standard (GEVCh) is a whole complex of Atomic standards (caesium, hydrogen and rubidium) situated in specially equipped rooms with controlled microclimates. The error of reproduction of units of time and frequency by GEVCh at the present time is around 5×10^{-14}. All standards are synchronised between themselves with a high degree of accuracy providing a single co-ordinated Atomic time scale in the USSR. As well as maintaining the standard time bases, the GSVCh is responsible for transmission of standard time and frequency signals, astronomical time services and metrological management.

The standard time and frequency signals are broadcast in short, medium and long wave bands, plus time signals on TV and broadcast stations. Reception of these signals is accessible to any users. These signals have wide usefulness as standards for calibration of all kinds of measuring equipment.

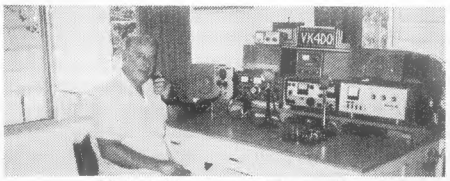
The operating details of the GSVCh stations are shown in the tables below.

(Original article by Yu Krasnov and S Pushkin in "Radio", 1983, No 2. Translation by R F Hancock, VK5AFZ).

AR

SIXTY ONE YEARS WITH SAME SUFFIX

This month Hal VK4DO celebrates sixty one years on the air. He started operating as 4DO and through the years has changed to A4DO, OA4DO and finally his present day call VK4DO. **AR**



Hal at his operating desk.

Form 7.

COMMONWEALTH OF AUSTRALIA. No 71

POSTMASTER-GENERAL'S DEPARTMENT.

Wireless Telegraphy Act 1905-1919.

Experimental Licence (Transmitting and Receiving).

IN PURSUANCE and exercise of the powers and authority conferred upon the Postmaster-General by Section 5 of the *Wireless Telegraphy Act* 1905-1919, and by the Wireless Telegraphy Regulations, a licence is granted to—

Mr. HAROLD LEARMONTH HOBLER,

to erect an Experimental Wireless Station at ROCKHAMPTON, Q'LD. , and to operate the said Station for a period of twelve calendar months from the date hereof. The erection and operation of the said Station shall be carried out in accordance with the provisions of the said Regulations, as amended from time to time during the currency of this licence, and shall be subject to such further restrictions and conditions as are from time to time notified by the Postmaster-General or by any officer thereto authorized in writing by the Postmaster-General.

By direction of the Postmaster-General,

J Malone
Chief Manager, Telegraphs and Wireless.

Date 14 NOV 1923

SCHEDULE OF THE AUTHORIZED STATION.

1. No. of Licence 1217 Expires 6-5-24.
2. Name of Licensee HAROLD LEARMONTH HOBLER.
3. Location of station DENISON STREET, ROCKHAMPTON, Q'LD.
4. Type of receiver VALVE- NON-REGENERATIVE.
5. Type of transmitter VALVE power 10 watts
6. Operating wave-length 240 Metres Call sign 4 D.O.

Signature of Licensee H. L. Hobler

Date 23rd. Nov, 1923.

COMMONWEALTH OF AUSTRALIA.

Certificate No. 1003

CERTIFICATE OF PROFICIENCY IN RADIOTELEGRAPHY.

GRANTED BY THE POSTMASTER-GENERAL.

FIRST CLASS

This is to Certify that, under the provisions of the International Radiotelegraphic Convention and the *Wireless Telegraphy Act* 1905-1919, Mr. Harold Learmonth Hobler.

has been examined in Radiotelegraphy, and has passed in:—

(a) The adjustment of apparatus and knowledge of its working.
(b) Transmission and sound reading at a speed of not less than 20 words a minute.
(c) Knowledge of the regulations applicable to the exchange of radiotelegraphic traffic.

The candidate is proficient in the following systems:—

Spark

It is also certified hereby that the holder has made a legal declaration that he will preserve the secrecy of correspondence.

Signature of Certifying Officer Jm Martin for Chief Inspector (Wireless).

G P Maloney Actg. Secretary, Postmaster-General's Department.

15th July 1924 (Date).

Signature of Holder Harold L. Hobler.

Date of Birth 8th September 1906 *Place of Birth* Rockhampton Qld.

N.B.—This certificate may be endorsed, or withdrawn, at the discretion of the Minister in case of misconduct or breach of the Regulations on the part of the holder. Unless so withdrawn, it will continue to be valid so long as the Regulations of

SUPPORT YOUR ADVERTISERS

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AN AMATEUR WEDDING

On 5th November 1983, there occurred a most impressive (for sheer numbers) wedding! This event took place in Wentworth, which for those not so good at geography, is just across the border in NSW from Mildura in the heart of the Sunraysia area.

The bride and groom were two very popular amateurs from the area — Marlene VK2KFQ (formerly VK5KAB) and Ron VK2EFJ (formerly VK5AAB). The wedding took place on the verandah of their home, and was followed by a 'family and amateurs' reception at a local hotel.

Among the guests were twelve amateurs and six XYLs, making up almost half the guests. The MC was an amateur, and the music was provided by another amateur.

Marlene and Ron left after the reception for a trip to VK6 on their motorbikes, and enjoyed meeting other amateurs in Perth.

They join the rest of the husband and wife teams in Sunraysia to make a total of four pairs!

Best wishes for the future, Marlene and Ron.

Marilyn Syme VK3DMS
PO Box 91
Irymple, Vic 3498

AR

MOVING AROUND WITH THE TRAVELLERS NET

Keith Scott VK3SS
34 Henry Street, Maffra, Vic. 3860.

Since enjoying journeys with the Victorian Range Rover Club down the Canning Stock Route over the Great Sandy and Gibson Deserts in WA, several of the original desert travellers, some newcomers and the writer, all bitten by a similar bug, have traversed nearly all the tracks, or what remains of them, surveyed and constructed some twenty to twenty five years ago by Len Beadell and his construction group.

From 1979 to 1983 various routes were taken in several directions across the largest deserts which are the Simpson, Great Sandy and Tanami making use of the Travellers Net.

The Travellers Net, also known as the six Kilo Charlie Travellers Net, was first started in Albany WA by Keith Williams VK6KC and Doug VK3YK in early 1972 and is one of the most useful nets at times even surpassing the Flying Doctor Radio Service. It comes on air at 0300 UTC from Perth via VK6ART every day of the year on 14.106 MHz. Arthur is regularly assisted from base stations by VKs 6KC, 6YE, 3YK, 3PN and others when conditions are bad.

These guys keep in touch with amateurs on board yachts almost anywhere in the world but especially around the coast of Australia, passing messages, giving up to date weather reports and sometimes organising invaluable assistance in times of trouble.

Likewise they give the same assistance to land travellers all over Australia. Anyone with problems gets assistance organised one way or another, often via local amateurs alerted by the net base station.

These controllers have plenty of data and up to date knowledge to point out places of interest, road conditions, introductions to amateurs in remote areas and frequently organising spare parts for vehicle problems.

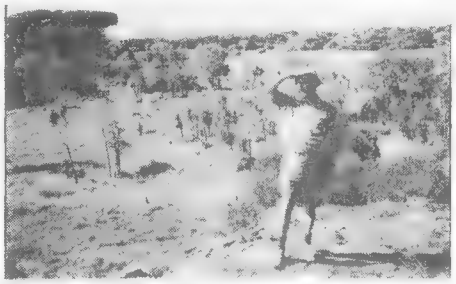
During my trips I have found that using a 100 Watt mobile with a resonant helical it has been possible to have nearly 100 percent Australia wide communications and sometimes, at night, rare DX stations will call to say they have been following the days travels with interest.

Experience has proved the most important thing for getting consistant results was to tune the helical for minimum SWR on the frequency intended for use. If it is an adjustable type, and most are, zero SWR every 25 kHz on each band then file a small notch on the adjustable rod.

During May and June we went from Maffra, Vic to Darwin and Kakadu National Park — a long journey but thoroughly recommended.

Most of the off main road places of interest were visited — Katherine Gorge, Cutta Cutta Caves and Mary River Falls where there is a delightful fresh water swimming pool and a fairly large water fall in lovely surroundings.

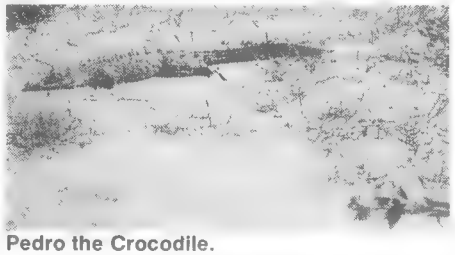
L-R BACK ROW: Fred VK3BXL, David VK3DWN, Maurie VK3CWB, Mike VK3KVW, Geoff VK3ACZ, Groom Ron VK2EFJ, Bride Marlene VK2KFQ, Bill VK3KBP, Peter VK3BEJ.
L-R CENTRE ROW: Bev VK3BXK, Marilyn VK3DMS, Rob VK3BHJ.
L-R SQUATTING: Les VK3BPW, Bob VK3DIF.



Keith in Arnhem Land.

Several hot springs were worth a deviation off the Stuart Highway.

The Stuart Highway was extremely rough but Darwin was finally reached and then on via the Arnhem Highway to Kakadu National Park. It is stated that about one third of all our native birds reside in this Park.



Pedro the Crocodile.

Many crocodiles are seen basking on the river banks and many varieties of bird life, and goannas and water dragons run into the water whilst buffalo emerge.

John VK6GU and his XYL Hope.

At Lake Argyle on the Ord River we met with Kevin VK6KG and his XYL and then on to Wyndham where 20 km out of the town it was possible to trigger the channel 2 repeater which was constructed by John VK6GU and Peter VK6KDX. John and his XYL Hope were thrilled to see visiting amateurs and John allowed us to use his radio gear for my regular sched with David VK3DY.

AR

WILLY WILLY WORKS WITH WOOD

Mike O'Burtill, VK3WW
PO Box 115, Heathcote, Vic 3606

A place in the country, a couple of acres, space for antennas and a few tall gum trees to hang them on. There is many an amateur who has dreamed this retirement dream and being one of them I decided to make it come true. But let me state clearly that you may retire but not Mr Murphy, oh no, he moved in the day I hung my first dipole on my country retreat.

The trees that were tall enough to hold an aerial 7-10 metres above ground were placed such that a 40 m dipole was all I could fit in. Of course I have trees at greater spacing, but they are not tall enough.

Well it's back to the 9 m flag pole masts, but this time I wanted to ensure that they would be easy to raise and lower for maintenance and completely safe in all winds, I did not want to spend a fortune on them either.

Firstly I chose the position for each pole and carefully checked the area covered with the pole lowered and the guy positions with it raised.

Next a hole in the ground — if you can't get one dug by mechanical means use an auger 150 to 200 mm in diam and dig down at least 1 metre. From here I will describe the erection of one pole as they are identical. The footing for the pole is a piece of 100 mm x 100 mm red gum 3 to 3.5 metres long. The pole hinges on the top of this so don't cut corners — it MUST be at least 100 mm x 100 mm and long enough to be in the ground 1 metre and above ground 2 to 2.5 metres.

The footing should be primed, undercoated then given two or three coats of good white enamel paint. The in-ground-end is painted with bituminous paint.

Don't bury it yet.

Picture 1: Pole on footing partially raised.

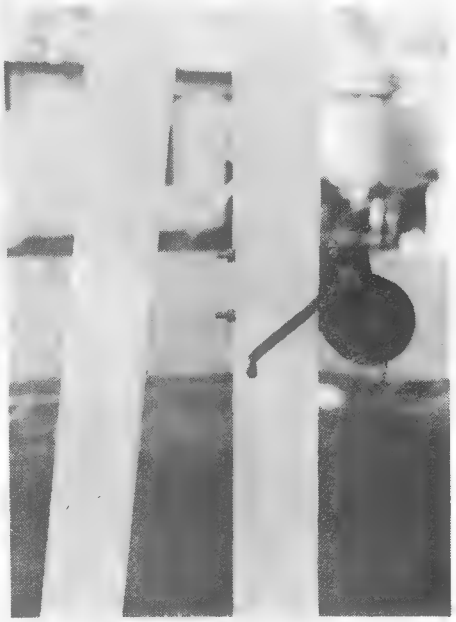
The method I use is to hinge the pole to the top of the footing and winch it up with a three to one boat winch. Incidentally the winch costs between $25-$30 but don't despair, I use the same winch on each pole.

Picture 1 shows the pole partially raised and picture 2 shows the hinge mounting with the pole upright.

Picture 2: Hinge mounting with pole upright.

Placing the footing on the ground beside the pole, allowing for the in-ground section, and mark the hinge mountng holes on the pole and footing. Near the base of the pole and footing we need two more holes centrally located, one for the lock bolt and one for the winch cable. See picture 3, the winch cable hole is 50 mm below the lock bolt. Next you need two holes for the winch mounting on the footing. See picture 4. The actual height of the winch will depend on what is comfortable for you. The best idea is to clamp it to a ladder and vary its height above ground until it feels right for you, it will be somewhere around 1.2-1.5 metres above ground. While the pole and footing are side by side bolt the hinge to both and check that the lock bolt and winch cable holes line up, *it is very hard to adjust these once the pole is vertical.*

Picture 3: Lock bolt in position. Lower hole is for winch cable.



Picture 4: Winch mounted to footing.

In years gone by I have had problems with coach bolts binding in exposed timber so I decided to eliminate this possibility by lining

all holes with aluminium tubing. The imperial sizes have a 1/16" wall thus reducing a diameter by 1/8". A 1/2" hole sleeved with aluminium takes a 3/8" bolt. This is a little extra work but well worth it.

Now you are ready to erect the footing. You will need a spirit level, crow bar, shovel and a good mate. It is most important that the footing be perfectly vertical and that the soil be tightly packed around it. If this is done properly there is no need for concrete.

Once the footing is in let it settle for a couple of days then get that good mate back plus another if possible and lift the pole onto the top of the footing. Bolt the hinge to the pole and footing and rest the end of the pole on a ladder. Now bolt the winch in position and run the cable through the hole at the base of the footing and to the base of the pole. If you have a side mounting winch rather than a centre mounting one, you could use a pulley at the side of the footing. I have found no trouble with the cable pull through the central holes, which are also sleeved with aluminium.

Back to the cable. Clamp it with a suitable cable clamp and ensure that it cannot slip out of the base of the pole.

Before you start to winch it up make sure your halyards run free and that you have a safety strap ready at the base of the footing and also a spanner to remove the winch and cable and finally to fit the lock bolt. Now get that good mate to steady the base of the pole to avoid side sway and start to winch it up. This is probably the easiest part of the job.

Picture 5 shows the pole almost erect. The safety strap at the base can be any strong material such as a leather or webbing belt or strong rope. Fit your guys to their anchors loosely then remove the cable clamp, wind up the cable and un-bolt the winch from the footing. Push the pole the last few inches to the footing, put the safety bolt through and tighten it. Adjust the guys to allow a little top sway, remove the safety strap and you are ready to go. You can now move winch and tools to the next pole and do it all over again.

Picture 6 shows the end result.

Picture 5: Pole almost erect. Note safety strap at base and lock bolt ready to fit when winch is removed.

Picture 6: The end result.

Nine metre poles take a bit of finding. Try junk yards, you can sometimes get them at less than $3 per metre. One of my poles is a 100 mm x 100 mm oregon pole which is a little harder to winch up than a properly tapered flag pole but it does the job OK. I have no doubt some of the ideas mentioned in this article will be adapted to suit available material and situations and that is what amateur radio is all about.

73 WILLY WILLY
AR

Bill the Builder

Ted Holmes, VK3DEH
20 Edmond Street, Parkdale. Vic. 3195

The ancient steel box, rescued from beneath Bill Blitheringtwit's bench, where it had lain for years, festooned with cobwebs and heavy with dust, had been cleaned up and now reposed resplendent upon the bench top, its vivid purple paint gleaming. Bill had spent some time achieving this and felt quite proud of the result. Now to get down to drilling some holes.

He had decided to have six pass transistors and so needed three good heat sinks. The aluminium channelling up in the roof space would do for these. No matter that it used to be shower screen runners and that it was a bit battered here and there. He could soon fix all that up!

He also needed some black paint. Here he was in difficulties. The last pot of that colour he had accidentally spilt whilst painting his budgie cage. It wasn't really his fault. He had sneezed and the whole load had shot out of the paint pot and covered the cage and the innocent bird inside. The budgie — in full song at the time — had been rendered instantly silent. Bill still received the occasional reproachful glance from his wife whenever she saw the now empty cage.

So he decided that Zebo grate polish would do. After all, it was black and nobody would see the heat sinks anyway, as they would be at the rear of the box.

Whistling a tuneless air, Bill drilled happily away at the box and sawed pieces of aluminium channelling. He dusted off the prehistoric transformer and ripped away some of the mouldering fabric covering. A liberal coating of sticky bitumen soon covered up the result and it looked quite smart. Antique switches and terminals were salvaged from the dark caverns beneath the bench, dusted down and fitted to the box. The transformer was bolted down inside. Wiring (rather suspect) was rapidly draped here and there.

After covering the small remnants of channelling and himself with Zebo, Bill bolted them to the back of the case. My word! Things were humming along! The mains power cord (fabric covered and torn from an old radiator) was installed. He drilled more holes and fitted the transistors, two to each heat sink. All FB stuff!

Now for the circuit board. Fortunately, this was already assembled and all he had to do was insert a few resistors, a regulator and some electrolytic capacitors. Capacitors! Now where were they? A search for some large electrolytics took three hours. Of course, he failed to notice their low working voltage, concentrating more on their high capacity. Also he broke one of the legs of the voltage regulator during the soldering operations but this had been repaired with a short piece of wire. Everything looked OK now and ready for action.

Bill plugged in and switched on. There was a flash and a bang as the electrolytics exploded. The transformer started to smoke. The wiring caught fire. The house fuses blew. Things looked rather grim but a garden hose was at hand.

As Bill directed the hose in the general direction of the workbench he was blissfully unaware that one other thing had contributed to his present predicament. He had entirely forgotten about the mica insulator washers for the pass transistors.

————oOo————

THÈVENIN REVISITED

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In response to many requests for the solution to competition No 3 in August 82 AR, I decided to write this article on equivalent circuits. This requires a consideration of the lesser known Thévenin and Norton Theorems.

Thèvenin's Theorem States:— *Any two terminal linear network may be replaced by a (voltage) generator, whose voltage is equal to the open circuit voltage between the terminals, in series with the output impedance seen at the terminals.*

The open circuit voltage can be measured directly. To find the output impedance an ammeter is connected directly across the terminals, ie the short circuit current is measured. See Fig 1.

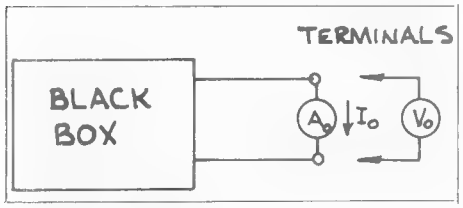


Fig 1. Measuring the open circuit voltage and short circuit current.

The equivalent circuit inside the black box is shown in Fig 2.

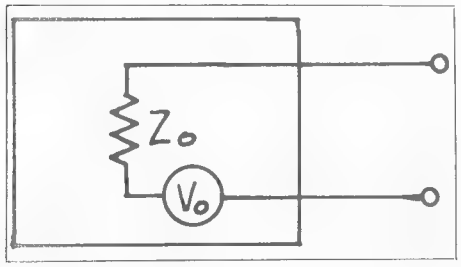


Fig 2. Thèvenin Equivalent Circuit.

Here we can see that if the open circuit voltage is measured then no current will flow through Z_0 and it will be equal to V_0.

If the terminals are short circuited then the current that will flow is given by

$$I_0 = \frac{V_0}{Z_0}$$

hence the output impedance

$$Z_0 = \frac{V_0}{I_0}$$

Similar results can be obtained using Norton's Theorem which states that any two terminal linear network may be replaced by a current generator, equal to the short circuit current, in parallel with the output impedance. See Fig 3.

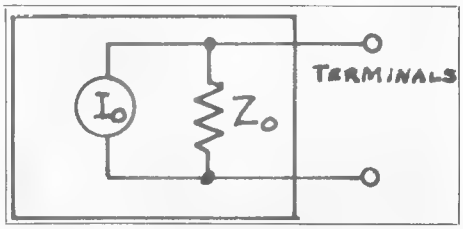


Fig 3. Norton Equivalent Circuit.

Here it can be seen that the open circuit output voltage V_0 will equal the voltage across Z_0. That is $V_0 = I_0 Z_0$, and the short circuit current will be I_0 as no current will flow through Z_0. These circuit conditions (V_0, I_0 and Z_0) are the same as for the Thèvenin Equivalent Circuit.

So far we have not considered what was in the black box. It could be any network of EMFs and resistors. Let's now analyse a simple arrangement which leads to transistor biasing. See Fig 4.

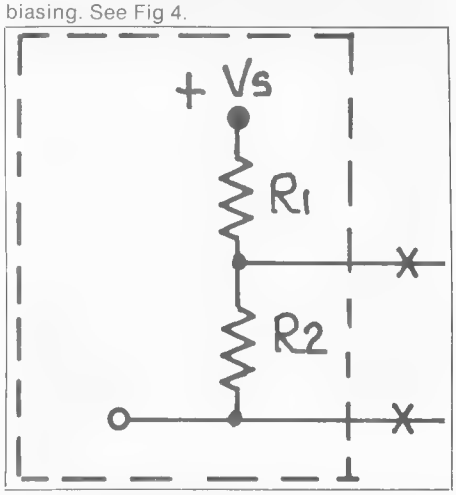


Fig 4. Transistor bias circuit x-x are our two terminals and the black-box is dotted in.

To obtain our Equivalent Circuits we calculate

1 Open Circuit Voltage

$$\text{This will be } V_0 = \frac{R_2}{R_1 + R_2} \times V_S$$

and 2 The Short Circuit Current

$$\text{This is } I_0 = \frac{V_S}{R_1}$$

Hence the output impedance is given by

$$Z_0 = \frac{V_0}{I_0} = \frac{R_1 R_2}{R_1 + R_2}$$

This is easily recognisable as the parallel combination of R_1 and R_2. We can now draw our equivalent circuits. See Figs 5, 6.

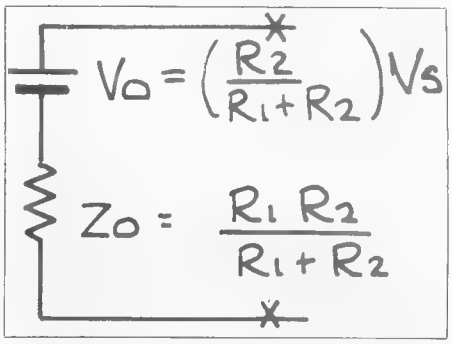


Fig 5. Thèvenin Circuit.

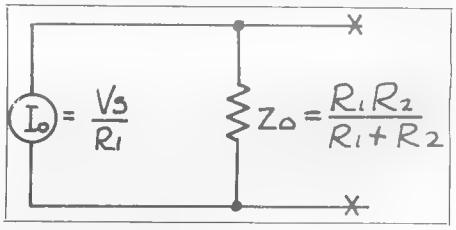


Fig 6. Norton Circuit.

Now lets look at the Transistor Circuit in August 82 AR which is redrawn as Fig 7.

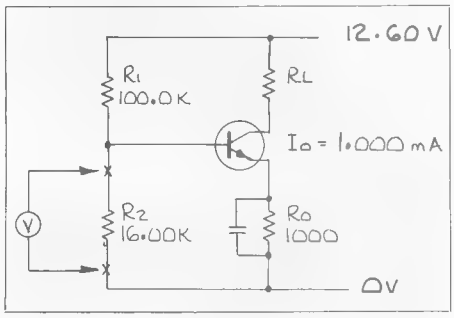


Fig 7. Transistor Circuit.

When the voltmeter V is placed across R_2, R_2 is then loaded with the voltmeter resistance in parallel, so the circuit conditions change accordingly.

In Case 1 we use a 20 kohm per volt, voltmeter on the 10 V range. Therefore the loading resistance will be 200 kohm and the new (equivalent) resistance from base to ground will be 16 kohm in parallel with 200 kohm. This works out to 14.815 kohm (call this R_3). (Note that all valves on the above

diagram have four significant figures, hence the answer should have four significant figures, so all calculations will be done using five significant figures to be rounded off at the end.)

Next it is necessary to draw the Thèvenin Equivalent Circuit and compute the equivalent values. Refer to Fig 8.

Now we take the base-emitter circuit and we are told that the forward biased Vbe is 0.600 volts, and that Ib = Ie/100

hence $V_0 = Vbe + Ie\ Re = Ib\ Z_0$

ie $1.6258 = 0.6000 + Ie \times 1000 + Ib \times 12\,903$

but Ie = 100 Ib

therefore

$1.6258 = 0.6000 + 100\ Ib \times 1000 + 12\,903\ Ib$

$1.0258 = 112\,903\ Ib$

$Ib = 9.0857 \times 10^{-3}$ mA

$Ie = 9.0857 \times 10^{-1}$ mA

knowing Ie gives $V_{RE} = 0.90857$ volts

and $V_{BE} = 0.6000$

So looking at the base-emitter circuit in the original diagram

$V_{R2} = V_{BE} + V_{Re}$

$= 1.50857$ volts

Rounding this to four significant figures gives 1.509 volts — this is what the voltmeter will read.

This value can also be found by taking the circuit in Fig 8 and will be equal to

$V_0 = Ib\ Z_0$

ie $1.6258\ V - 9.0857 \times 10^{-3}\ mA \times 12.903\ kohm$

$= 1.6258\ V - .1172\ V$

$= 1.509$ volts

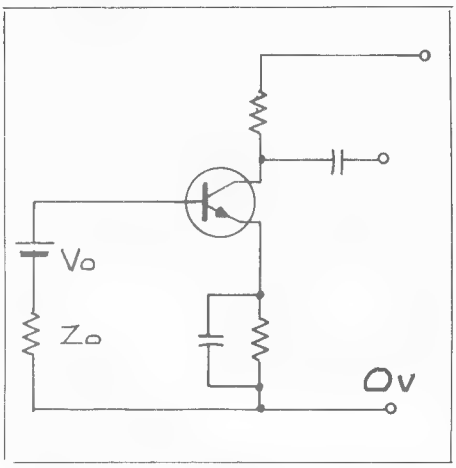


Fig 8. Equivalent Circuit and calculations.

$$V_0 = \frac{R_3}{R_1 + R_3} \times V_S$$

$$V_0 = \frac{14.815\ kohm}{114.815\ kohm} \times 12.60\ V$$

$$= 1.6258\ V$$

and

$$Z_0 = \frac{R_1 R_3}{R_1 + R_3}$$

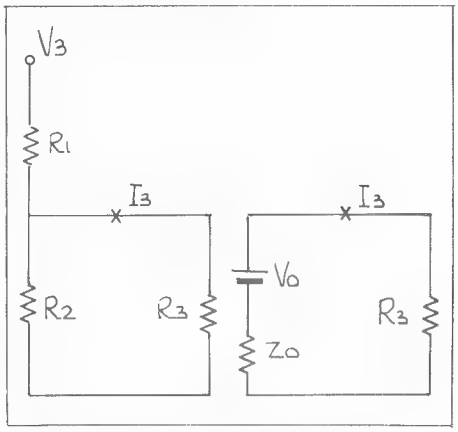
$$\frac{100.0\ kohm \times 14.815\ kohm}{114.815\ kohm}$$

$$= 12.903\ kohm$$

The solution of Case Z where a 10 Mohm input resistance digital multimeter is used, is identical to the above solution except that a 10 Mohm resistor is placed in parallel with R_2.

The voltage as calculated comes to 1.598 volts. This shows that there is about a 5.7% error when using the ordinary multimeter and only 0.125% error when using the digital multimeter. (The actual voltage is 1.6 volts.)

Try this as a mathematical exercise.



Using the Thèvenin Equivalents for

$$V_0 \left(= \frac{R_2}{R_1 + R_2} \times V_S \right)$$

and

$$Z_0 \left(= \frac{R_1 R_2}{R_1 + R_2} \right)$$

Prove that i3 will be the same in both cases.

AR

EMC QSP

EMC and CB

The Home Office Radio Interference Report for 1981 underlines the large increase of compaints made by viewers and listeners during the year, many relating to the operation of illegal 27 MHz amplitude-modulated transceivers in the months leading up to the licensing of 27 MHz FM equipment. However, a reading of the report shows that many of the arguments publicly used for a number of years by the Home Office to oppose allocating 27MHz for CB were based on the false premise that the prime cause of RFI to domestic equipment is harmonic radiation. The report shows that not harmonics but "direct audio break-in arising from the close proximity of the CB transmitters" is the main problem. It could thus be argued that CB operators have been (and still are being) blamed for the poor electromagnetic compatibility of modern domestic electronic equipment.

Of the 14,359 complaints ascribed after investigation to illicit CB; over 3000 referred to MF radio and more than 9200 to Band IV-V UHF television — few of these appear likely to have been caused by "harmonic radiation". The statistics do, however, lend support to the view that FM transmissions cause less problems than AM (though listening in the London area reveals that widespread use of illegal AM is continuing).

There can be no doubt that there are many home-entertainment equipments, such as cassette recorders, that are vulnerable at distances up to 50-100 ft or so to interference from low-power AM (or SSB) transmitters of the type marketed for CB operation. The vulnerability undoubtedly increased significantly when solid state devices replaced valves in domestic equipment; it was also made worse by "unit" audio equipment with interconnecting leads that act as aerials. Yet there is also little doubt that domestic equipment could have much improved electromagnetic compatibility at relatively little added cost. For many years, British and American manufacturers have resisted suggestions that TV sets could be made far more resistant to RFI although some European firms have been more responsive.

The recent showing at CETEX of "unit-video" systems by Sony and Philips may raise the question once more, since there is evidence that a number of separate units tends to be more vulnerable to RFI than a single unit; for example the combination of a video recorder with a TV set tends to increase EMC problems.

Interference complaints in 1981 rose sharply over 1980 — from 35,790 to 70,452. This near doubling in numbers appears to have overwhelmed the system with 28,490 uncompleted cases carried over to 1982. Nevertheless the number of completed investigations rose by 47 per cent from 41,086 to 60,571. Although much of this large increase is due to 27 MHz CB operation, there appears to have been a general increase in complaints of interference from other causes, although there was a significant drop of 16.57 per cent in complaints identified as due to contact devices, from 10,684 in 1980 to 8,914 in 1981 — almost wiping out the very large jump in such interference recorded in 1979.

Despite the increase, the complaints amounted to less than one for every 500 TV licence holders; on the other hand, over 11 per cent of licence holders for the two-way land mobile radio services reported interference, though it should be stressed that 18,048 licences over 340,830 LMR receivers.

Radio complaints were sharply up (24,648 compared with 20,345) but this puts radio back on the ascending curve of the past decade with 1980 the odd-man-out. The VHF/FM service accounts for about half the number relating to LF/MF.

AR

Part 1

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HIGH PERFORMANCE DIRECT CONVERSION RECEIVER

The bulk of direct conversion receivers that have appeared to date have been presented as "fun" receivers, or as beginners projects which generally cover only one band. However, a DC receiver is capable of giving very good results with a little extra complexity.

This receiver performs surprisingly well, and has the following characteristics:

Frequency Range: 3.5 to 3.7, 7.0 to 7.4 and 14.0 to 14.8 MHz.

Reception Modes: SSB, DSB, AM, CW and RTTY.

Sensitivity: 0.3 microvolts for 10 dB × N : N ratio.

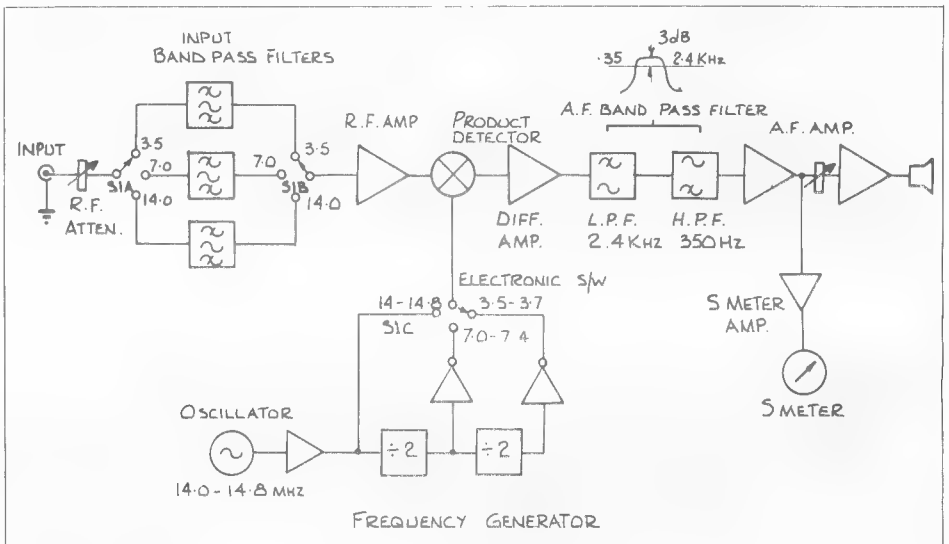
Audio Filter: -3 dB at 350 Hz and 2.4 kHz, -50 dB at 100 Hz, -45 dB at 10 kHz.

Frequency Stability: Less that 500 Hz change in frequency on 14 MHz in any one hour period after warm-up. Improves by a factor of ½ for each sub-band.

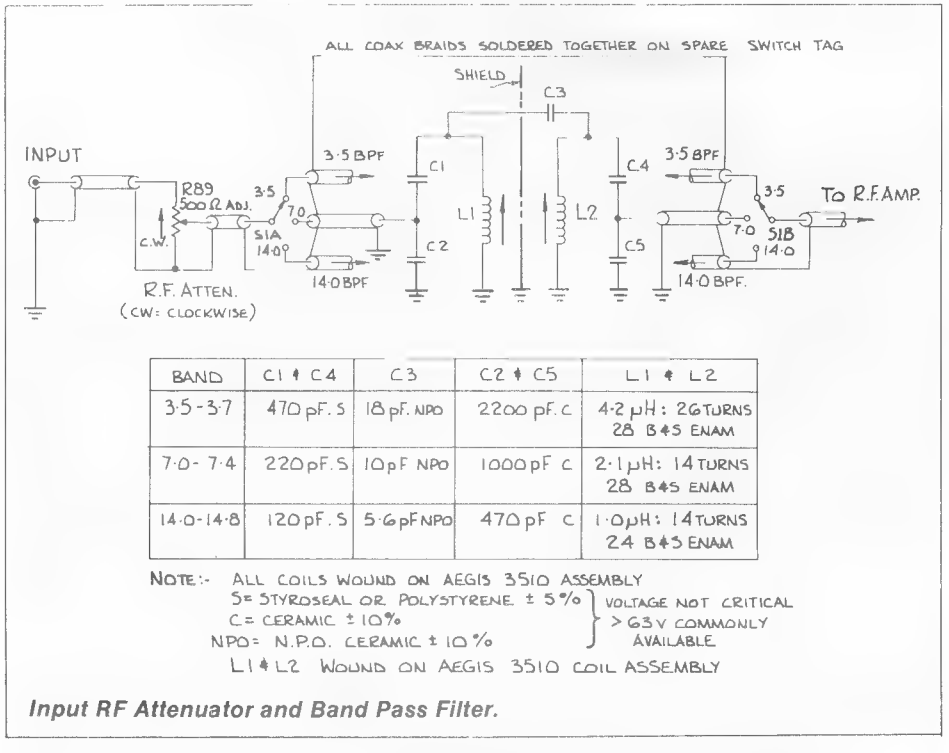
Internally Generated Spurious Signals: None.

Immunity to a 30% modulated AM signal 50 kHz away: 72 dB above 0.3 microvolts (1.6 mV).

On air operation is very pleasing. Signals have a crystal-clear presence, and they are less affected by impulse noise, due probably to the absence of multiple tuned circuits which can cause ringing. The only disadvantage with a DC receiver is that the unwanted sideband is not easily suppressed, and single-signal reception is not easily possible. This is considered a small price to pay in view of the high simplicity versus performance trade-off. This receiver was designed with parts availability, ease of construction and reproducibility in mind.



Block Diagram.



BAND	C1 ↔ C4	C3	C2 ↔ C5	L1 ↔ L2
3·5-3·7	470 pF. S	18 pF. NPO	2200 pF. C	4·2 µH: 26 TURNS 28 B&S ENAM
7·0-7·4	220 pF. S	10 pF NPO	1000 pF C	2·1 µH: 14 TURNS 28 B&S ENAM
14·0-14·8	120 pF. S	5·6 pF NPO	470 pF C	1·0 µH: 14 TURNS 24 B&S ENAM

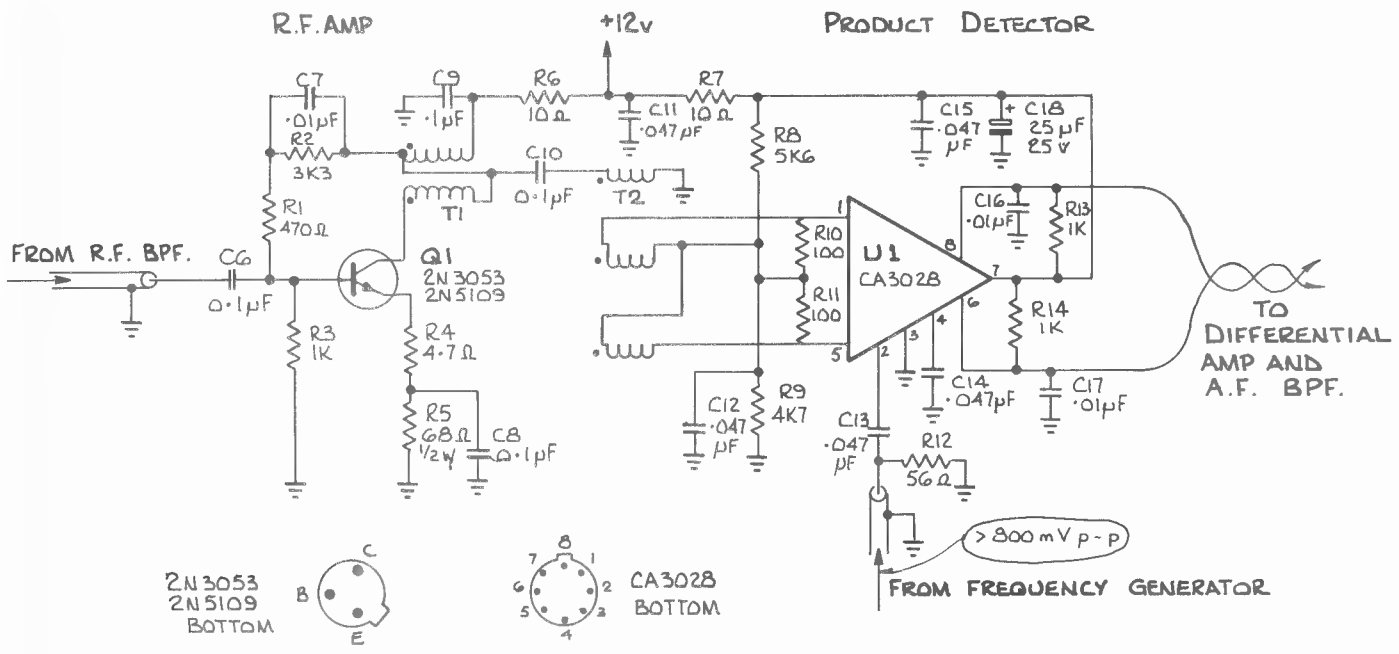
NOTE:- ALL COILS WOUND ON AEGIS 3510 ASSEMBLY
S= STYROSEAL OR POLYSTYRENE ± 5% } VOLTAGE NOT CRITICAL
C= CERAMIC ± 10% } > 63V COMMONLY AVAILABLE
NPO= N.P.O. CERAMIC ± 10%
L1 & L2 WOUND ON AEGIS 3510 COIL ASSEMBLY

Input RF Attenuator and Band Pass Filter.

BLOCK DIAGRAM DESCRIPTION

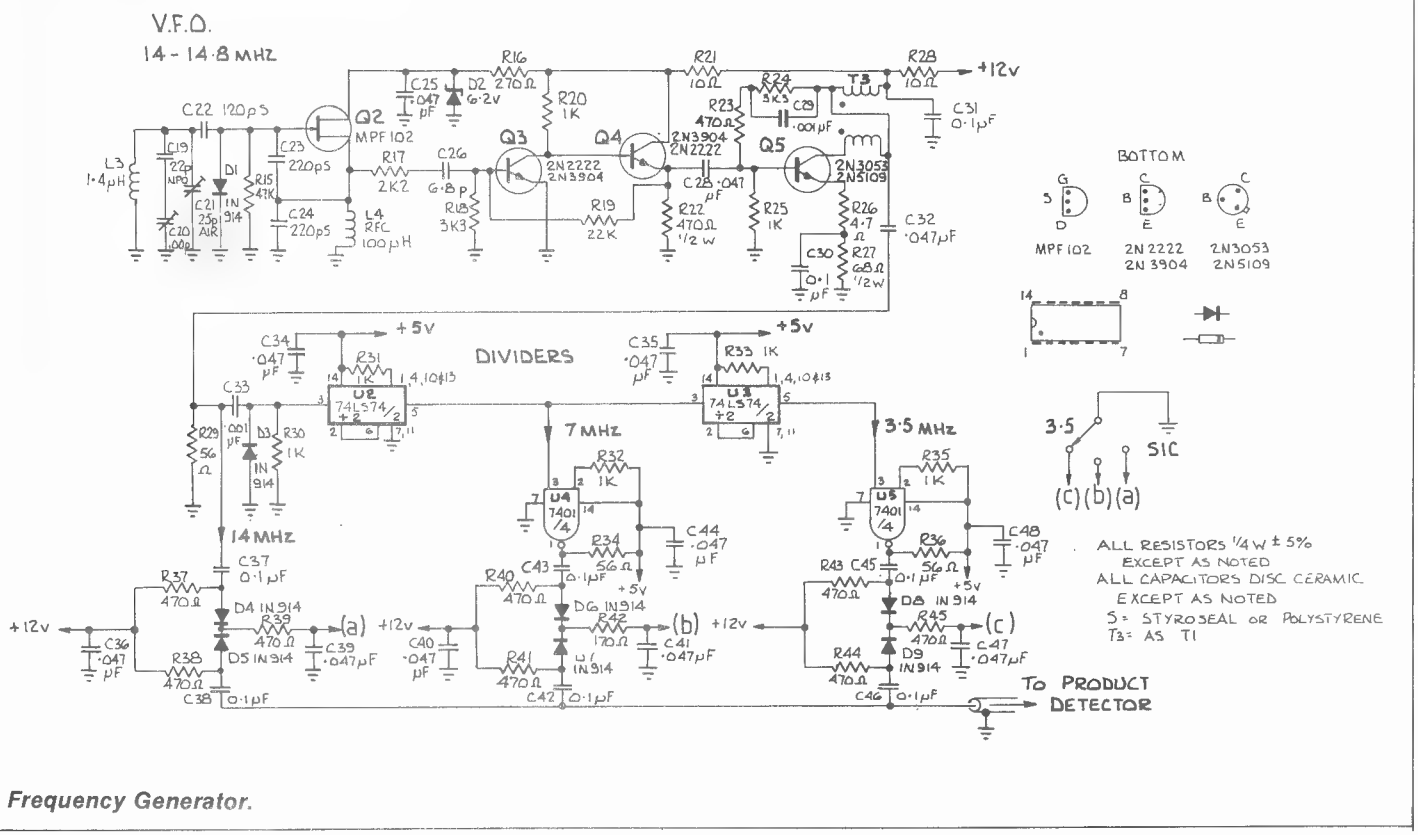
A broadband RF amplifier yields about 10 dB gain to incoming signals, and is preceded by a band-pass filter (BPF) to provide RF selectivity for each band. Only signals inside the band of interest are presented to the RF amplifier. For SSB, DSB and AM reception, the incoming signal is mixed at the product detector with a locally generated carrier of exactly the same nominal frequency. For CW signals the local carrier is offset higher or lower by about 1 kHz to provide an audible tone.

To generate the local oscillator signal, a VFO tunable from 14.0 to 14.8 MHz supplies carrier injection for that band, and is divided by two to supply 7.0 to 7.4 MHz, and by two again for the 3.5 to 3.7 MHz band. To avoid input overload problems, a diode switch,



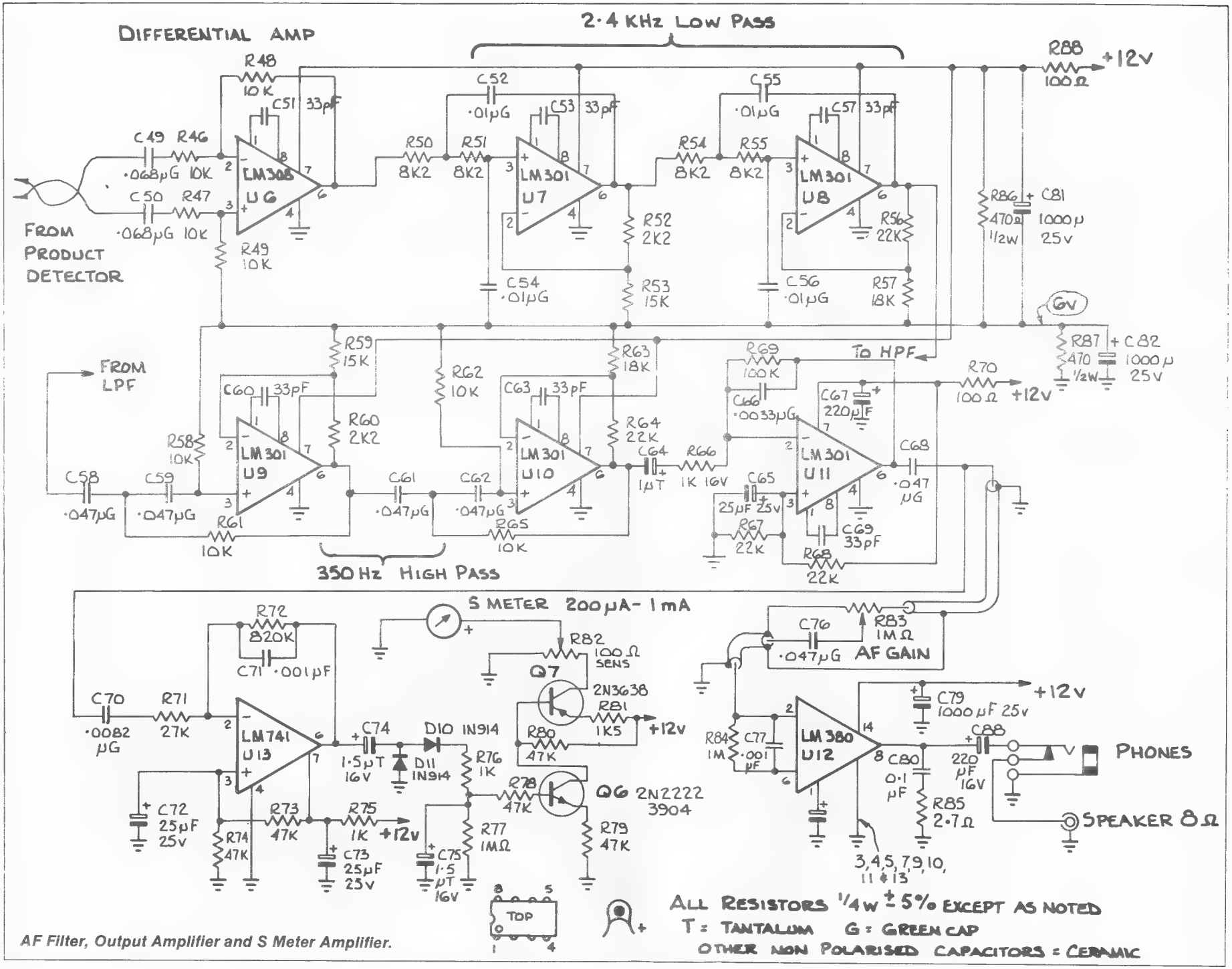
ALL RESISTORS 1/4W ± 5% EXCEPT AS NOTED
ALL CAPACITORS DISC CERAMIC > 25V EXCEPT AS NOTED
T1 = 13 TO 14 LOOPS, 24 B&S TWISTED BIFILAR ON NEOSID 4327/2/F25 CORE
T2 = 11 LOOPS 24 B&S TWISTED TRIFILAR ON NEOSID 4327/2/F25 CORE

RF Amplifier and Product Detector.

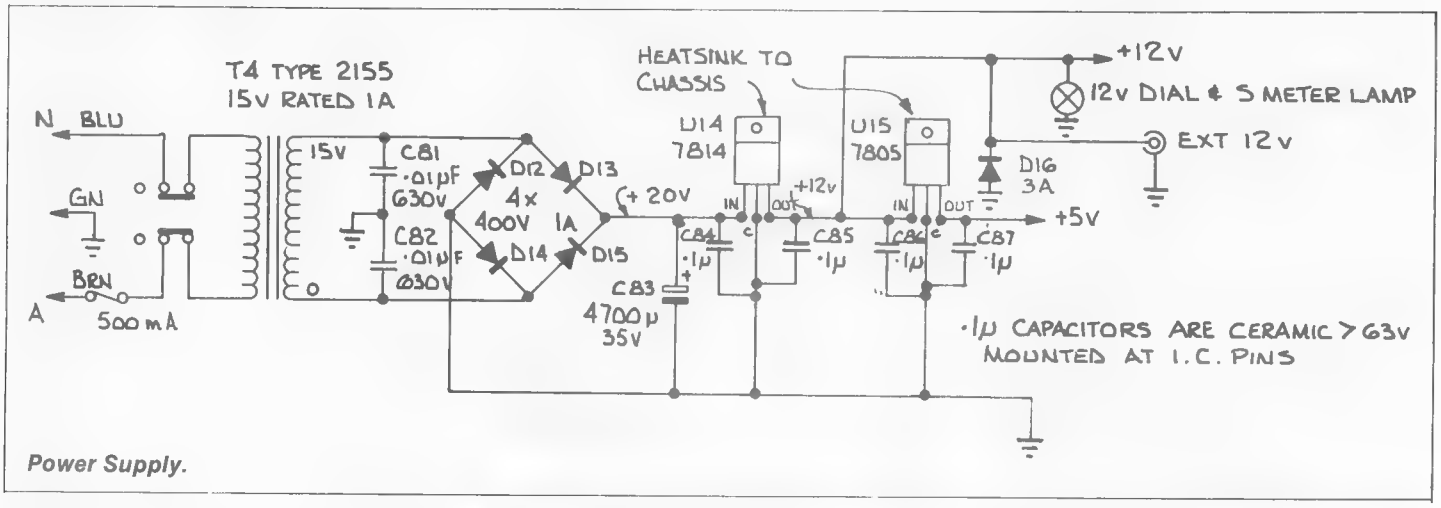


ALL RESISTORS 1/4W ± 5% EXCEPT AS NOTED
ALL CAPACITORS DISC CERAMIC EXCEPT AS NOTED
S = STYROSEAL OR POLYSTYRENE
T3 = AS T1

Frequency Generator.



AF Filter, Output Amplifier and S Meter Amplifier.



Power Supply.

activated by the band switch routes the appropriate carrier signal to the product detector for the band selected. The signal from the frequency generator board is not filtered, as the square characteristic of the output signal on the two lower bands provides very good detector action.

The balanced output of the product detector is applied to the differential input of the audio band-pass filter. Two second-order Butterworth low-pass filters are cascaded to provide a fourth-order filter with a 3 dB cut-off to 2.4 kHz. This filter is followed by two second-order Butterworth high-pass filters to form a fourth-order high-pass with a cut-off of -3 dB at 350 Hz. Frequencies outside this range are greatly attenuated, and all the audio frequency selectivity of the receiver derives from this filter.

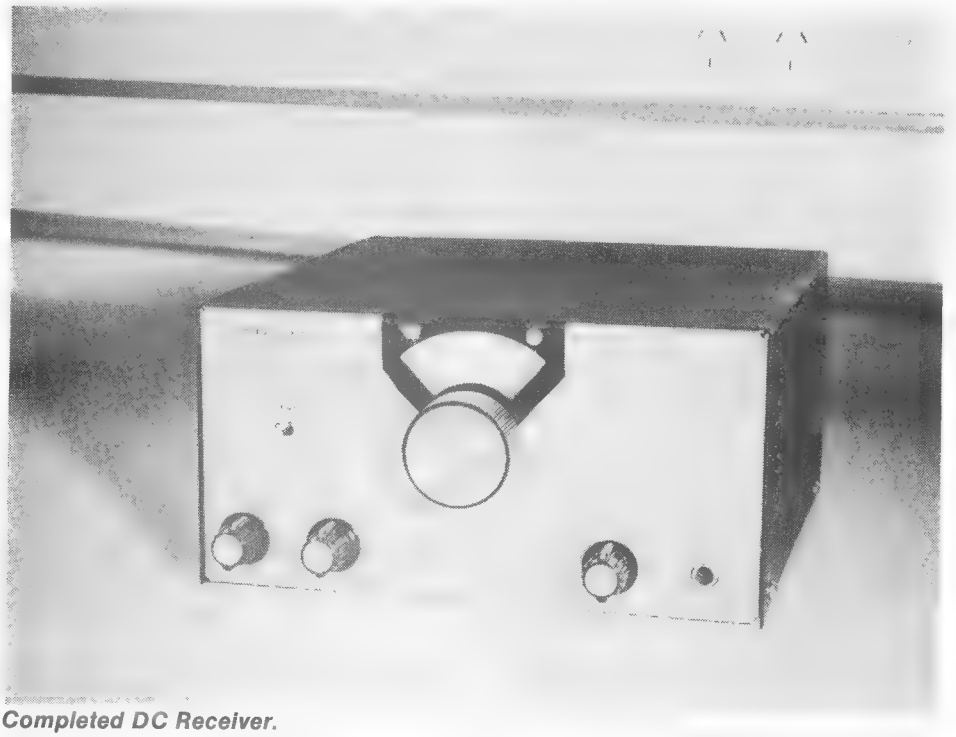
The filtered signal is applied to a 40 dB AF amplifier to provide some gain, and again to the AF output amplifier to power speaker and headphones. The signal is also picked off at the output of the 40 dB amplifier and applied to the S-meter amplifier to drive a moving coil meter to give an indication of signal strength.

CIRCUIT DESCRIPTION

The input RF band-pass filter is absolutely necessary to provide RF selectivity. It consists of two top-coupled tuned circuits which are switched into circuit according to the band in use. Input and output impedances are approximately 50 ohms so that signals may be routed via miniature 50 ohm coaxial cable.

A broadband bi-polar RF amplifier at Q1 gives about 10 dB gain to incoming signals. This amplifier is a 'strong' one, with feedback, and is not easily overloaded or damaged by large signals.

Incoming signals are mixed with a locally generated carrier in the product detector. This detector is a singly balanced mixer, with the wanted product being audio frequencies. For example; SSB signal on 7.050 MHz LSB, locally generated carrier on 7.050 MHz will produce resolved audio. Or for CW; CW signal on 7.051 MHz, carrier on 7.050 MHz will produce 7.051-7.050 = 1 kHz. The CA3028 IC at U1 is a differential pair of transistors with a current source transistor feeding these two ('long-tailed pair'). Incoming signal is applied differentially to the bases of the differential pair at pins 1 and 5, and local carrier is applied to the base of the current source transistor at pin 2 in common mode. The product of this action is taken from the collectors of the pair at pins 6 and 8 and applied to the differential input amplifier of the audio band-pass filter. C16 and C17 remove any RF component from the detected signal.



Completed DC Receiver.

U6 functions as an interface between the differential output of the detector and the single-ended input of the audio filter. It is at the same time a low impedance source for the input RC network at the input of U7. Detected signals are first applied to a 2.4 kHz LPF to remove all unwanted higher frequency products. This filter is a fourth-order Butterworth, with an attentuation at 10 kHz of 45 dB. This LPF is followed by a fourth-order 350 Hz high-pass filter to remove all unwanted lower frequency products. This filter has an attenuation of 50 dB at 100 Hz. It is thus possible to resolve SSB, AM and DSB signals with ease, because all redundant low frequency is removed by the HPF. Power line related noise (50, 100, 150 Hz etc) is also greatly attenuated. By backing a LPF against a HPF in this manner, a band-pass filter is formed. However, ringing is not a problem as each section of the filter is independent of the other sections. R86 and R87, bypassed by C81 and C82, provide a 'centre-tap' reference to the plus and minus supplies for the op-amps in the audio filter.

The BPF is followed by an LM301 at U11 with a mid-band gain of 40 dB, and an LM380 at U12 to power speaker or headphones. AF signal is also taken off at the output of U11 and applied to the S-meter amplifier U13. The signal from U13 is rectified, and C75 is charged positively. The time-constant of C75 and R77 are chosen so that the S-meter reads an average value according to the strength of signal. Q6 and Q7 form a DC amplifier to drive the meter coil. Liberal decoupling is used throughout the receiver to prevent instability.

Part 2 will have construction details and photos of the individual boards.

Photos: Peter Dalliston.

AR

THUMBNAIL SKETCHES 1930s ERA

Alan Shawsmith, VK4SS
35 Whynot Street, West End, Qld 4101

During these past months, cameo sketches of early Queensland amateurs and their activities have been brought to you by Peter Brown VK4PJ, who deserves unstinted praise for his work and research. Putting together such hard to obtain information, which otherwise would have been lost forever, requires considerable time and effort. All will support me when I say, "Congrats Peter — well done".

The privilege of continuing these sketches into the 1930s has now fallen to this writer. However, so that the reader may better understand the activities of this era, a very quick run-down on the state of the art of the period is in order. Firstly, a few figures.

At the commencement of the year 1930 there were almost 100 licensed amateurs with callsigns in Queensland. Nearly a decade later, ie August 1939 at the outbreak of WWII, this number had increased to about 300 (give or take a few) — a gain of 200 or more. A research of this latter list has shown the following breakdown:

Still licensed and mostly active — approximately sixty; Silent Keys — ninety; Not traceable — between fifty and sixty.

These figures are not final in any way but they are close enough to enable one to draw certain obvious conclusions. First, the three to two ratio of SKs to those still active is something to ponder about. Under the classification of NT — NOT TRACEABLE — are those who have simply disappeared from the scene, either by allowing their callsign to lapse, moving to parts unknown, or becoming SKs. Without saying more, it is obvious that within a decade or less the amateurs of the 1930s will be a vanishing group — a sombre thought.

Because it helps to define parameters and establish images, certain names or terms are often applied to historical eras. The short but intensive span of amateur radio can be divided into three over-lapping, yet distinct periods. They are:

The days of the PATHFINDER
The HALCYON DAYS OF WIRELESS
The POST WWII Years

These latter years saw the birth of the plug-in appliance operator and 'rat race' operating attitudes — a period which is still partly contemporary and yet to be more clearly defined by subsequent historians.

The Pathfinders of the pre-1930s are those honoured few, dedicated experimenters and explorers, to whom the rest of us owe so much. Originally, in the first decade of this century, amateurs began building and operating SPARK transmitters in what is now the broadcast band, or lower still in frequency. Later they were shifted, by a USA political decision, to the HF bands, where it was hoped the fraternity would simply wither away from lack of DX. The miracle that followed is now a fact of history and set the scene for amateur radio and DX as we known it today.

More than one historian has observed that the late 20s and 30s were the Halcyon Days of amateur radio. This is not old men merely indulging in sentimental romance. In those dozen or so years prior to WWII, three unique progressions became established and these first-ever developments were:

The advance from CW to phone QSO, thus providing communication with the ultimate intimacy of the human voice.
The defining and common usage of regular day and night DX routes.
A world-wide increase in the number of operators, so that for the first time in history the planet began to take on the aspect of a global village.

These are the reasons why the 1930 period is now referred to as the Halcyon Days of Radio. Some three hundred VK4s were privileged to be part of it and thumbnail sketches on many of them will appear in this column.

AR

SAY GOODBYE TO TVI

By Frank Hunt ZL2BR

BASIC RULES

1 A cure can be found for all causes of TVI.
2 Before a cure can be effected the cause must be found.
3 Use a good TVI diagnosis chart.

THE FACTS

Out of the many magazine articles and books written on the subject the following are highly recommended:

Magazine articles, RSGB Radio Communications, "Special Interference Edition" May 1975. "Practical Braid-breakers" November 1972. "Audio Frequency Interference" April 1973 Books, Radio Frequency Interference ARRL, 1978.

It must be clearly understood that finding the cause of the TVI is the most important first step to take.

The three basic causes of TVI are:

1 Faulty transmitter, ie harmonic and/or spurious signals being generated in the transmitter, which fall into the passband of the TV channel affected.
2 Faulty television receiver and/or aerial system, ie the TV receiver tuner is being overloaded by the signals from nearby transmitters.
3 External rectification of the amateur signals, ie harmonics generated by bad joints in nearby metal objects, such as badly constructed amateur aerials, iron roof, and spouting etc.

Whilst cause two is probably the most common, cause one can still occur even with new solidstate transmitters, and cause three can be hard to find.

Curing TVI is simple, providing you go about it in a logical professional manner, going right through the tests listed in a good TVI diagnosis chart (the RSGB chart is preferred as it is more comprehensive than the ARRL chart). A lot of time can be wasted on building and trying out some of the many so called instant cures and strange devices that have been published in various magazines.

If the TVI is being caused by overloading of the TV tuner, it is going to be a complete waste of time and money placing a low pass filter in series with the transmitter output. Likewise it is no use placing a high pass filter in the TV aerial feeder, if the TVI is being caused by harmonics or spurious emissions from the transmitter. In addition it is no use using a low pass filter to prevent harmonics etc being radiated from your aerial, if the transmitter sheilding is inadequate. In this respect a dummy load is essential to check this out.

Unless you have access to sophisticated test equipment homebrew low pass filters can be a disappointment. Of the commercial low pass filters available, the Drake TV-3300LP is recommended, tests using sophisticated test equipment have shown this filter to be far superior to Japanese made filters.

When carrying out the tests as per the TVI diagnosis chart, enlist the assistance of another amateur who has past experience in interference matters. One of you can operate the transmitter, and the other observe the results on the affected television set. Co-ordination using 2 m hand-helds can speed things up.

Finally, before trying to clear TVI on a neighbours set, make sure your own set is interference free.

from Break-In, Jan-Feb 1983
AR

THUMBNAIL SKETCHES

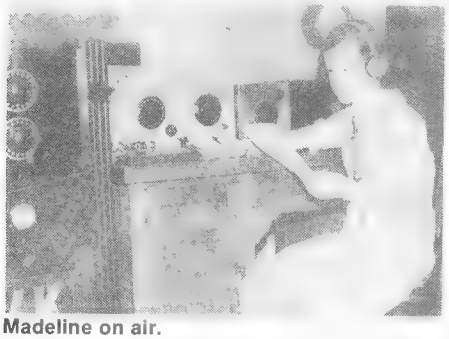
Alan Shawsmith, VK4SS
35 Whynot Street, West End, Qld 4101

MADELINE MACKENZIE — VK4YL

Conspicuous in every human activity is the child prodigy — a juvenile who can, in many cases, outperform grown-ups. One of the first to do this in amateur radio pre-war was Madeline Mackenzie, VK4YL.

The weekly wireless journal of the time "TELERADIO", in its issue 6th July, 1935, described VK4YL as the youngest radio operator in the British Empire. She was twelve years of age and had sat for and passed the full ticket, at the first attempt, which included code at 12-14 WPM. All VK4s should be honoured to claim her as a fair dinkum Sunshine State product. Admittedly, Miss Madeline did have one advantage in her pre-exam tuition — her OM was Mac, VK4GK. However, the AOCP paper set in the thirties was in some aspects a more formidable test than the one given today; there was no ticking of squares, all questions required a lucid written answer, often accompanied by diagrams. Time allotted 2½ hours. A stout effort for one so young you'll agree. Space permitting, a 1930s exam paper will be published at a later date.

Those who possess outstanding talent can usually turn in a high definition performance with apparent ease. This describes Madeline's ability with the Morse key. In a matter of a few years, by the time she was fifteen, she had acquired an impressive list of rare DX QSLs and she further demonstrated her skill by entering and earning meritorious placings in the contests of her day. Not all have been recorded but some of her *world-high* achievements are:



Madeline on air.

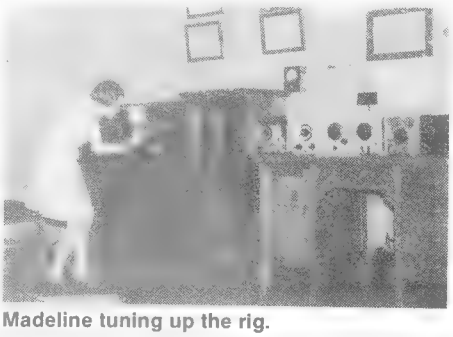
BERU 1935 — 13th in the Junior Section
BERU 1936 — 7th in the Junior Section
BERU 1937 — 14th position Senior Section
BERU 1938 — 6th position Senior Section

As the BERU Contest in those days was a *big* affair, this latter is an outstanding performance for a fifteen year old.

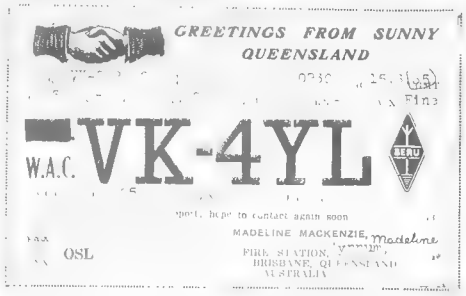
By the end of WWII Madeline married and embarked upon a new career — that of setting up a home and having a family. After some thought, she made the conscious decision not to continue with AR, already knowing it to be a time-consuming hobby — besides, she was involved in Scottish Highland Dancing. This was AR's big loss; there's no doubt that had she continued, her ability as a code operator would very quickly have been internationally recognised.

Madeline, VK4YL is very much alive to-day, looking young for her years and living at Nambour, Queensland. One wonders what her comments might be should she take the time to have a good listen to the present-day rat race!

AR



Madeline tuning up the rig.



CEDRIC MARLEY — VK4CJ

Cedric William Marley, VK4CJ obtained his ticket at Brisbane on 15th February, 1938. His interest in wireless began in 1936 when he homebrewed a crystal set and first enjoyed the excitement of receiving broadcast stations. Next came valve-type receivers and then his AOCP licence. At this time, Cedric lived at Highgate Hill, an inner Southside suburb of Brisbane — among a nest of amateurs and SWLs (the writer being one of them). Quite unknowingly, these may have stimulated his interest in AR.

However, VK4CJ had hardly entered properly into the swing of AR and DX, when WWII intervened and he went off to do his bit in both the RN and RAN and with the US Navy. He served a total of seven years in which he saw action in both combat spheres, Atlantic and Pacific.

After peace was restored Cedric joined the PMG as a Broadcast Technician and was employed on several of the ABC regional transmitters throughout Queensland and New Guinea where he finally joined the ABC. He is now retired but is still quite active on air — mainly A1 mode.

VK4CJ has brought two considerable talents to AR. He is a W/O of professional standard, as one might expect after so many years pounding brass in the Navy and professionalism is a quality AR could use in heaps. He is also a very handy homebrewer; for a long time, by choice, he built his own gear. Let me quote a small paragraph from a recent letter Cedric wrote to me:

"I wound my own modulation chokes and power trannies and ground my own crystals from blanks obtained from the optometrist for two shillings each. I had a one valve receiver with plug-in coils and, as I ground the blank, I followed its frequency by holding it against the lower frequency coil and, as I tuned through resonance, one could hear the musical 'ping' in the headphones. Of course, sometimes the crystal would go out of oscillation due to its axis having been changed. I would then restore its axis by grinding the edge of the blank. When nearing the 80 metre band I would slow down the rate of frequency change by using talcum powder as grinding paste."

This prompts one to ponder upon how many present day operators would get on air if all trannies, coils and chokes had to be self-wound to the right volts or henrys and crystals hand ground to exact frequencies.

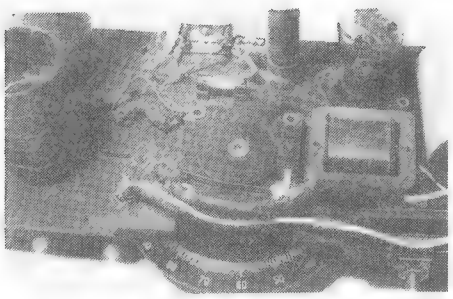
Cedric comments that one of his first amateur receivers was a three valve TRF using 58, 57, 56 into a pair of headphones — written in those days as 1-V-1. It wasn't until the YL next door came a-visiting the station, or its operator, that VK4CJ was finally persuaded to add a 2A5 output pentode valve working a speaker, so that they could both listen together. Cosy you'll agree.

After the war VK4CJ joined the WIA when their meetings were held in Adelaide Street, Brisbane — and later, when in Rockhampton, became a member of the local radio club which was formed by Hal, VK4DO. Cedric is presently a member of RAOTC, the RNARS and the Rag Chewers Club (ARRL). Gear used now is in the form of a black box, viz TS520S, with beam and wire antennas to suit.

In cogitating on the 1930s, VK4CJ observes that they were great days of good mateship and many laughs. How true Ced, how true!

AR

NOSTALGIA — CLANDESTINE SWLing



Reg Glanville, VK2ELG
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There have been occasions over the past few years when the submission of this true story to AR was considered, but enthusiasm usually capitulated to such thoughts as "insufficient technical interest", "old hat" etc. However, in June our editor, Gil Sones, wrote — "Articles on subjects of general interest to amateurs are also welcome". I feel the following narrative qualifies within the boundaries. To maintain vintage authenticity; mensuration will be imperial; and capacitor, inductor, anode, antenna, radio, will be — condenser, coil, plate, aerial, wireless.

During the economically depressed 1937, I, then a teenager, obtained a job with a wireless dealer in a small Victorian town, at seven shillings per 44-hour week — quite a windfall, my interests had always been mechanical/electrical, not to mention the boost to flagging family economy!

Fairly soon a basic comprehension of RF coil coupling, tuning, audio transformer function etc was acquired, but the mysteries of valve function were elusive — my boss with more than one "iron in the fire", had little time to impart knowledge, which frustrated me.

Then I read an advertisement from Radio College, specialising in correspondence courses . . . enrolled and commenced burning the midnight oil. Little was it realised the asset this study would be a few years hence to myself and a hundred others.

This small town had no power supply, hence all wireless was battery — "superhets" were making their presence felt — AWA Radiola, Stromberg Carlson, Astor, Essenay, Philco, Lekmek, Tasman, Elco, and others (car wireless non-existent).

Most of these were housed in pretentious timber cabinets, up to 3 ft 6 ins high, huge dials, 8 inch speakers and usually four valves.

Popular valves were Radiotron, Kenrad, Mullard — 2 volt filament "A" battery (wet rechargeable), 3 x 45 volt "B" batteries in series, for plate supply (these were a myriad of 1½ volt torch cells in series, enclosed in a cardboard outer container with spring clip tappings every 15 volts). (EverReady, Diamond and Impex were popular.) Grid bias "C" battery, 9 volt. Average "A" battery life per charge — three weeks; "B" battery — six months; "C" battery — one year.

Battery business was *BIG*. Impex were active merchandisers; on one occasion the 1-ton van arrived at our shop empty — said the salesman: "I detoured among the farms and sold the lot for cash!"

Just visualise the effort of hundreds of "A" batteries being transported to the few sources of petrol driven chargers. Some farms boasted 32 volt lighting plants, and usually charged their batteries — some tried the new fangled vibrator device, with a DC step-up from 6 to 100 V to eliminate "B" batteries — slightly noisy and suspect reliability. This vibrator principle powered car wireless 1945/50 with the advent of miniature valves.

Some set owners had technological tendencies — they were prospects for low priced multi range volt meters and electrolyte hydrometers . . . Repeat sales were excellent — broken hydrometer glasses and burned out meters — omitting to change range when testing from "C" to "B" batteries.

Most of these superhets used the unreliable 1C6 oscillator/mixer valve, and many trips were made to sets still under warranty just to replace this valve. Up to forty miles travel, two hours away, in a 1926 Dodge sedan, obscure 2-wheel brakes, 3-speed with "back to front" gear change, steering like a haystack along vague tracks. Warranty allowance from maker — a replacement valve only.

The depressed economy occasionally resulted in some unique "payment of accounts", especially from farmers, viz home killed meat, eggs, butter, firewood, were bartered. I well recall one instance when the boss and I spent a whole day installing aerial and earth — payment — a whole dressed sheep! On return to the workshop, the bench was cleaned, and "account payment" divided. No refrigeration or ice chests of course. "Never, in the annals of radio servicemen, have so few, dined so well, for such a short time" . . . with deference to a great statesman! Even our bank manager was unable to advise us how to record these transactions.

Owners rarely brought these sets to the workshop for servicing — large cabinets 50 lbs weight plus five batteries — a case of Mohammed goes to the mountain.

Being an old established locality, most sets within our service orbit were aged "pre-superhet" in bulky timber mantle cabinets, bakelite front panels, horn speakers (often Amplion) — strident volume, nil bass response — all battery powered of course. Mostly three valve (cost dictated), medium band only 4 or 6 volt filament "A", 60 volt plate "B", 4½ or 9 volt "C" neg-bias batteries, fed via a birdsnest of wires.

Circuitry invariably was a four pin triode valve 4 inch high, glowing "V" filaments. The tuned aerial coil applied RF to the grid leak detector, with RF regenerative feedback from plate to grid via a variable condenser and coil coupling to tuned circuit (the Rheinartz principle). This valve, occasionally in a spring cushioned socket to minimise vibration of elements, was the cause of audio howl.

Enthusiastic use of feedback induced oscillation and the primitive receiver became a transmitter. Imagine the cacophony of loud speaker squeals when fifty sets within half mile radius were tuning to a popular programme!

My ability to build and service this type of circuit virtually blindfolded proved of inestimable value four years later. The second triode, an audio amp, transformer coupled to output triode (occasionally a penthode), still utilising a 4-pin socket, with screw terminal on the side of the valve base as a screen voltage supply. Among these basic receivers were some sophisticated types, up to six valves — one non-tunable RF amplifier, two separately tuned RF stages (TRF), detector, audio driver, and output valve (imagine battery consumption).

We are reminiscing now circa 1925/28 with such names as Atwater Kent, Cossor, Pilot, Blaupunkt, all in expensive timber mantle cabinets, bakelite chassis, little shielding, 3 inch diameter coils (some basketweave). Cossor were the exception, with an all metal cabinet and chassis (fun and games with battery lead short circuits!) — these sets displayed impressive control panels, with up to three tuning dials, regenerative dial, audio volume, dial light dimmer, on/off switch on "A" battery only (no "B" current when filament cold), a grand total of seven dials and knobs. Occasionally at the rear — a selectivity RF wave trap — usually only the man of the house dare touch these electronic juggernauts.

Construction workmanship was magnificent — solid square section busbar wire for all connections, laid with geometric precision, straight parallel runs, 90° turns, multi-coloured-spaghetti covered where necessary, but usually bare. Craftsmanship in reality, in stark contrast to the "birdsnests" concealed under some later chassis.

The standard aerial installation consisted of random wire, on 18 ft of 2 x 1 inch hardwood, lead in end attached to the inevitable brick chimney (two or three per house), lightning arrestor knife switch on window sill, ALWAYS an earth.

Finally AC power was reticulated to town — one has to experience this to appreciate the social and economic impact on a locality that has previously never had electricity.

The "trade-in" value of a battery radio plummeted, so changeover to AC sets was a major expense. Battery retailing declined rapidly — extreme care had to be exercised with stock levels (battery shelf life in those days was limited) — replaced by sales of light globes, flex, radiators, etc. Battery-charging business collapsed. Electric signs and displays put life into our hitherto dull shop, a demo radio could be left playing, illuminated shop windows and streets boosted late Friday night shopping, which for a time became a social event.

Efficient street lighting spelt "death knell" to teenage nocturnal manoeuvres! Lighting kerosene sales collapsed, exotic lamps — table and standard — were valueless, and dumped . . . today they would be collectors' items.

"State of the art" AC sets appeared, up to eight valve, two I/F's, magic-eye tuning (cathode ray), push-pull output, 12 and 4 inch speakers — the dynamic field coil of a larger speaker doubled as power supply filter choke. I still feel the best of these could match the audio fidelity of current solid state. Small, low-priced mantle sets were available, which ushered in the era of the second set.

Expensive battery lighting plants lost value overnight. Toast became common on family menus.

Secondhand components induced me to build simple receivers, sold readily by the boss. A memorable day when I walked home with such a "junk box special" to present to Mum, our first ever wireless. About this time I heard an amateur experimental operator — phone and recorded music — approximately 1400 kHz, Sunday mornings, callsign 3RG(?), Castlemaine, and amateur seeds were sown, not to germinate until forty three years later.

Shortwave bands on clients sets triggered interest in SWLing, and two valve headphone sets were "home-brewed" — 22 g silk covered wire was heated and tensioned between sideboard knobs prior to winding on cardboard formers — dimensions trial and error.

By mid-1939 sabre-rattling in Europe was audible — at outbreak of war "yours truly" enlisted.

Welcomed with open arms with two years of wireless experience — I was drafted to an Infantry Battalion where the innermost secrets of the .303 rifle were revealed! Other recruits, ex dairy farmers, rabbit trappers, etc were designated by the Military hierarchy to Signals, to be indoctrinated in the intricacies of electronic communication!? Thus, via Palestine, Egypt, Tobruk, Greece, Crete, I became a "guest" of the Third Reich, (No 7999) attached to a Beetsugar factory in SE Germany.

During the Allied withdrawal of Greece, and the chaos of Crete, I experienced the devastating effect that lack of communication and reliable information had on people, particularly troops, who are trained to operate under organised conditions. Also, during the first few days as a prisoner of war (POW), extreme language barrier problems were manifest. One example — a group of us were under armed escort on foot through the mountains of Crete, when a halt was called. The German guard near me bellowed "AB"!! (pronounced "up") several times — I obliged by scrambling up the roadside bank, to be persuaded, per tommy-gun butt, down to a sitting posture — soon learned that "ab" meant "down"! Resolution — if circumstances ever permitted, to learn basic German; the long shot, at least a vestige of communication from "our side" of the fence.

After two years of army service I had achieved the rank of private soldier — thus, according to the Geneva convention, was obliged to work for the custodian — viz Germany and was detailed to a Beetsugar factory, near Polish/Czech borders.

Work fell into two categories — in the factory: humid, noisy, but WARM — outside: shovelling beet and coal, sub-zero temperatures. "Yours truly" well under weight, recovering from a malaria attack, crowned by shaven head — obviously did not enthuse German foreman as shovel-wielding potential — and thank God was sent inside.

Working week during season was twelve hours per day, seven days per week. No interpreter was with this party and as weeks passed, misunderstandings caused by language barrier stressed the need for basic German comprehension. I lodged a request for German/English Grammar books — promptly executed and arrived via International Red Cross, Geneva, in eight weeks. Study commenced — with preparing meals, laundry, sewing etc, sleep average six hours daily — eventually understanding prevailed, to a general advantage of the working party. I was appointed interpreter, which commenced opening doors, and my thoughts turned to wireless.

The factory was old, rambling; electrical workshop on first floor, accessible via route through the beet stockfeed drying plant — humid, odorous, rarely visited by authorities. Till now my duties were varied — hosing molasses off floor, sorting raw sugar bags, etc.

With my German rapidly improving, I dropped hints of basic electrical knowledge, and was given minor jobs — painting switch boxes, cleaning and charging batteries. This gained me access to the workshop, and first name terms with the German electricians — first base reached!

Months passed, work extended to simple electrical repairs, sometimes in the homes of land owners (factory shareholders) and senior staff, accompanied by a guard or civilian. I dropped hints in these homes of my wireless knowledge — eventually the occasional set surreptitiously appeared in the workshop. By 1943, service and parts for domestic radio was near non-existent, hence my increasing involvement.

Some benefits of Nazism to German workers were — Volkswagen (Peoples car), Volksempfanger (Peoples receiver), Kleinempfanger (Little receiver). Volume production of these two sets by existing manufacturers gave low cost wireless to the masses, albeit outmoded circuitry (but top-line German superhets were superb). I encountered the Kleinempfanger in homes of the affluent, popular as additional sets, or servants quarters — this set was my objective. Compact, simple, light — 110/230 volt, AC or DC, medium/long wave, suitable for any part of Europe — 9 x 4 inch bakelite chassis, small plastic case, 3 inch speaker — two Telefunken valves, VY2 rectifier and VCL11 (eight pin, metal clad 4½ inch high) detector/audio output. Power input through tapped wire wound resistor, to rectifier, iron cored choke and two paper filter condensers (no transformer). Tuning dial was a large flat knob, direct 1:1 on condenser shaft, 360° rotation, of which half was medium wave, half long-wave, a switch on the shaft cut long wave coil in or out. The set was a classic example of economic versatility — circuit the old Rheinartz feedback — shades of yore.

Factory manager's vintage superhet reached workshop — L, M and S wave bands, what a windfall! — diagnosed faulty power switch. Removed valves, speaker, dial, indicating major service in progress. The two German electricians were aged, friendly, not over zealous in Third Reich support, occasionally vanished for quiet 'smoko' — action then.

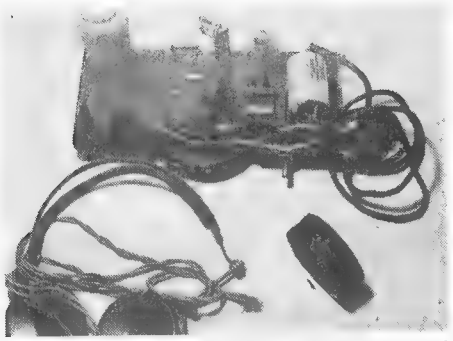
Area outside the workshop was manned by friendly Poles and Czechs — if 'enemy' appeared they called through ventilator "Essen"! (food), a common topic . . . beyond suspicion.

Thirty seconds to replace valves, connect speaker, 8 ft aerial out window — finally BBC England — 25 M band — news service in German. We were rolling Rommel in Africa! Impossible to describe — after three years in psychological capsule . . . a window had burst open!

I kept that set in the workshop for three weeks — six BBC News reports. Eventually four Kleinempfangers in workshop — faults . . . paper filter condenser and VCL11 — one owner bartered a dressed rabbit in nearby town for valve. I proposed to assemble two sets from four — agreed, they would roster sets week about — finally handed over two sets, and a bag of jumbled parts, including two cases and speakers. My reward a complete chassis less case and speaker — case too bulky, could not risk speaker audio — Kiwi friend in carpenters' shop tailored a wooden case — now for the head-phone hunt . . . which could raise suspicion.

On infrequent work visits to a nearby Manor House, I had met a blonde servant girl (biological tendencies transcended international differences) — the owner, a German officer, Berlin based, with close English connections. Popped ear-phone request — called a month later, she had 'procured' a set from her village (N & K — KIEL, 200 ohm).

Under darkness of a workshift change smuggled the set into the barracks — production of short wave coil the next task.



German Kleinempfanger (Little receiver) chassis, modified for short wave in Prisoner of War Camp. Top L to R — VC11 valve, tapped resistor 230/110 volt power supply, VY2 rectifier valve, filter condenser. Lower L to R — Shortwave coil wound on shaving soap case, tuning condenser with cam operated medium to long wave switch (not used in short wave modes), filter choke, regenerative feedback vari. condenser.

Head-phones 2000 ohm, and broadcast coil wound at home after war for personal use. Photo by Rex, VK2EEQ

Set kept in food cupboard, rarely searched (more cupboard than food!) — ear-phones in "ensuite" toilet, four-seat model.

Purloined suitable coil wire from factory "war effort" salvage bin (whose war?) — bakelite shaving soap containers ex Red Cross parcel, ideal former — taped this to four-pin valve base and socket ex workshop junk, to facilitate trial and error turns ratio — there were three coils on former. POW and guards barracks (separated by small parade ground) and coal heap, were enclosed within barbed wire compound, open only for shift changes. Our barracks were locked at 8.00 PM — two bars and padlocks — ample warning of unscheduled openings. Many sleepless nights and ten coil rewinds later — the BBC News in English!! — aerial 6 ft wrapped around power cord, Edison screw base plug into light socket, no earth, "shack" the four seat toilet (minus 4°C), at times most inconvenient! To this point, 'Operation Shortwave' had taken six months. Very demanding night after night to tune peak sensitivity but avoid oscillation — guards' radio distanced only 70 ft, if found could not expect much enthusiasm from them for my "transceiver".

Listened for news alternate nights 10.00 PM local — boost to POW morale incredible, one case of serious depression recovered. I became interested in the art of international propaganda; when possible received German medium wave news in workshop, then compared with the BBC — somewhere between was probably reliable. German propaganda was brilliant, always prompt, subtle phrasing to dilute bad news, rarely a false statement.

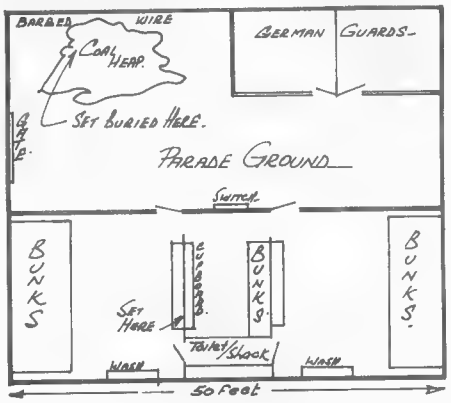
Intermittent "jamming" by Russia and Germany of various bands occurred, depending on military/political events, late in the war mainly German. The electronic war escalated — ground and airborn radar, tons of metal foil strip scattered by Allied bombers to refract radio/radar, sonar guided torpedoes, infrared bomb aiming through dense cloud, powerful ship-generated DC electric fields to counter magnetic mines, electronic guidance of V1 flying bomb and V2 rocket, German jet planes.

Initially, relevant facts of news services were memorised, occasionally "stored" for twelve hours for security reasons, sometimes two versions, Axis and Allied. This proved beyond the capabilities of my memory, and an effective "homebrew" shorthand was developed, with characters orientated to wartime news reports.

While listening lookouts were always posted at locked doors, but one night boisterous activities drowned the sound of a key in the lock — and armed guard strolled in. Guilty lookout sprinted to toilet, helped me bundle rig under one of the seats, and adopted a convincing posture there-on!

Prior info of inspection visits by Army "brass" invariably reached our guards per "grapevine" (appears to operate within armies world-wide). No advantage in disturbing status quo, so we obliged with a spit and polish cleanup — forewarned, I would wrap and bury the set at rear of guards' coal heap, at times snow covered.

Our lighting was switched off by guards at 10.00 PM, but a 25 W toilet light burned night long — nocturnal reading/writing thus confined to this inconvenient area. Switches and single fuse were outside barracks. My fear was a blitz-search after lights out, when the set was in the food cupboard. Plan to obviate this — remove toilet globe, short socket, replace globe — in general confusion of blacked out barracks, set would be ensconced in toilet. It happened once, worked like a charm — the search of cupboards etc was dedicated, but kept aloof from area under toilet seats!



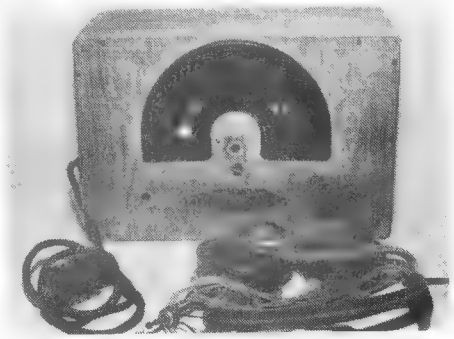
Map of the camp.

By the end of 1944 the Russian steam roller was at Germany's gates — also with six hours notice, eight of our work party, self included, were ordered to depart — destination unknown. The ratio of eight POWs to three guards obviated any hope of wireless concealment, so I reluctantly bade goodbye to my "pride and joy" and entrusted it to a Kiwi confidante — a traumatic moment. We travelled on foot and train to an isolated camp south of Berlin, and there met civilians and/or German officers of South African, English and Australian origin (a story in itself!). Our wireless loss affected morale — permitted occasional German news, in adversity understandably biased.

The horrific trauma of total war defies description — disorganisation, cold, hunger, heroism, refugees, a pot-pourri of nationalities, aggravated by nil communication, rumours rife. My wireless "swan-song" in Europe was to assist Allied advance troops to set up communication with a reconnaissance aircraft (with batteries a two man load) — no need for secrecy, which I found very difficult to assimilate.

Air-lifted to England, navigator casually talking to London — oh so simple! Hospitalised with malaria — then, after six years, the troopship at Southampton — Aussie bound! Crossing the wharf, a group of Kiwis, already aboard, greeted us — one of them called "Hey Sparks (me), I have your wireless on board!" — unbelievable! When they disembarked at Wellington, it was handed to me.

Under the most trying circumstances, my Kiwi friends had carried the set over 300 miles on foot, westward across Germany. Occasionally at night they had access to power, and Allied wireless news — the antidote to demoralising rumour. This was one of the sets that received mention over BBC news.



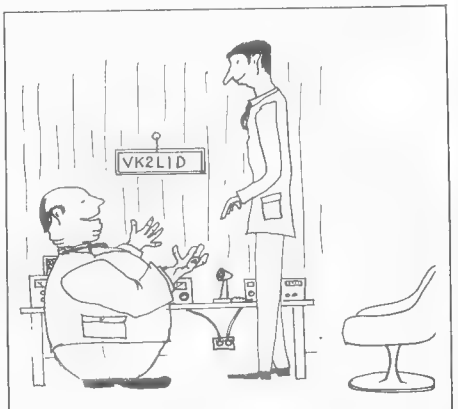
Chassis in wood case made by a New Zealander in POW camp.

At home — with brand new XYL — that set, with headphones shared, was our only wireless for six months. In August 1945 Australian radio manufacturers were permitted to resume production of domestic radio, in the same proportion of electric, battery and vibrator as 1939.

My set is still safe and sound, but rarely seen — disturbing memorabilia. When photographed for this article, was only the third time it's been unwrapped since 1946.

This story is as factual as memory permits — a true case of radio communication's influence on morale, emotion and the human mind. *de REG . . . VK2ELG*

AR



I usually only work the low bands . . .

SHEEP, OHMS AND THE CHESHIRE CAT

Roy Hartkopf, VK3AOH
34 Toolangi Road, Alphington, Vic 3078

A humorous, commonsense approach to some mathematical ideas which are basic tools for the understanding of electronics.

Although mathematics is usually regarded as one of the most exact arts or sciences it is actually a language of numbers which has "growed like Topsy" and thus contains all the contradications, redundancies and sometimes downright absurdities which can be found in any other language. The earliest mathematics must have been a very simple affair, a matter of counting animals where one sheep meant exactly and precisely one and nothing else. Addition was a matter of adding more animals and subtraction was a matter of taking some away from the flock. A "negative" sheep uneating grass — though it might be very useful in a drought — was an impossibility, and fractions of sheep ceased to be sheep in any real sense of the word. But when people began to till the land and build permanent cities some kind of measurement of lengths and areas became necessary and mathematics entered a completely new ball game. A negative length was not the ghostly counterpart of a "real" length, but simply a length in the opposite direction. The minus symbol no longer signified a simple subtraction or "taking away" but became an "operator" which operated on a length to swing it around to the opposite direction.

But the use of the same old symbols for both the mathematics of things and the mathematics of ideas led and still leads to a confusion where ideas are often treated as though they were actual things. A classic example is the Cheshire Cat in Alice in Wonderland which slowly disappeared until only the grin was left. Again, if there is a log lying on the road one can put a rope around it and haul it away, but it would be difficult to do the same thing with a hole in the road. Perhaps it is in division that the use of the same symbols in totally different situations creates the greatest confusion. One can divide six by two and get three, but if one divides two by six the answer is one third, which is a totally different answer. Also, while one can divide six sheep by two and get three sheep one cannot divide six sheep by two pigs and get three shigs or three pheeps.

In the mathematics of ideas and measurement however one can do all these things and not only get away with it but obtain useful and practical results. And this kind of division, where one thing (or idea) can be divided by something totally different is called a ratio. An example known to everyone is speed where we divide the kilometres travelled by the time taken and get an answer which has been given a name as if it were a real object. Actually it is only an idea in our heads. If the police pull us up and claim our car is unroadworthy we can take the car and present it as evidence in a court case. But if we are pulled up for travelling at high speed we can't put the speed in a plastic bag and take it along to show the court, because it is only a mental conception.

We can not only divide the kilometres travelled by the time taken and get the speed but we can also turn our ratio "upside down" and divide the time taken by the kilometres travelled and get an answer in hours per kilometre which means exactly the same thing. If we travelled like snails we would probably have a name for this ratio, maybe "sloweed". And a "sloweed" of a hundred hours per kilometre would be ten times slower than a "sloweed" of ten hours per kilometre!

Once we understand what a ratio is and that it has no relation to the ordinary division of sheep and cow mathematics we can gain a far better understanding of fundamental concepts such as Ohm's Law. It is fairly easy, if we accept the convention that electrons are tiny packets of energy which carry a negative charge, to appreciate that their concentration is represented by the voltage and the total quantity is represented by the charge. But if, as one student did, we image ohms as little wriggly things which are stuffed into resistors in order to fight the electrons and make it difficult for them to get through, we hardly have a very good foundation to build on! What we have to realise is that ohms, like speed, don't really exist at all. In fact in this case we have gone further because just as speed is the name for the ratio of kilometres divided by hours, so resistance is the name for the ratio of volts divided by amps. In order to get an exact parallel we would have to give our unit of speed a name and perhaps talk of a speed of sixty Malcolm Campbells.

The reason why the unit of resistance has been given a special name is that it is much simpler to talk of a resistor of, say, twenty thousand ohms than a resistor of twenty thousand volts per amp, let alone one of several million volts per amp. Just as we can turn the speed ratio "upside down" and talk about hours per kilometre we can, if convenient, turn our electrical ratio upside down and measure the extent to which the "resistor" conducts electrons instead of the extent to which it resists them. Again it means exactly the same measurement expresed in a different way. This upside down ratio is quite logically called conductance and the unit is the mho, which is ohm spelt backwards. So a resistance of 10 volts per amp, which is a resistance of 10 ohms, is the same as a conductance of 1/10 amps per volt or 1/10 mho, and so on. *(But recently, perhaps because spelling his name backwards was thought unfair to the late Georg Simon Ohm, the unit of conductance has been renamed the Siemens. Tech Ed.)*

Conductance is particularly useful in assessing the properties of electron tubes and FETs (but not bipolar transistors) where a *change of input voltage* causes a *change of output current*. Note that it is the *change* in voltage and the *change* in current which are measured, and because two separate elements are involved (grid and anode or gate and drain) it is called Mutual Conductance and is usually measured in milliamps per volt.

There are many other situations where ratios — the divisions with a difference — are used in electronics and a thorough understanding of them can prevent a lot of difficulty and confusion.

AR

Articles always appreciated by AR.

CLUB CORNER

MOORABBIN & DISTRICT RADIO CLUB

NOVICE CLASSES 1984

Novice Educational Class commenced at the rooms on Monday 13th February at 7.30 pm.
Morse from 7.30-8.30 pm.
Theory from 8.30-9.30 pm.
The cost: $30 — inclusive, entitles students enrolled to one year's subscription to the Club. Anyone passing this year's exam will get an extra year free subscription.
A REMINDER TO UNFINANCIAL MEMBERS
"DO SEND YOUR CHEQUE"
THANK YOU

WORKING BEE SUNDAY 1ST APRIL

We thought we would let you know early . . . The Clubrooms annual cleaning day will be held on Sunday 1st April, a good day to show your enthusiasm for the Club. Bring your own "handheld" broom, brush and bucket.

16th MARCH

FRIDAY — GENERAL CLUB MEETING IN CLUBROOMS. Guest speaker John Yee. Subject: Commercial Production of Circuit Boards. We can all learn from this.

13th APRIL

FRIDAY — GENERAL CLUB MEETING IN CLUBROOMS. NOTE: THIS MONTH THE 2nd FRIDAY and NOT the 3rd, due to Easter time. Speaker: Harold Hepburn VK3AFQ. Subject: High Performance Amateur Receivers. Another interesting subject given by a very interesting speaker.

7th APRIL

A TRADE DISPLAY is being organised in our hall on Saturday, 7th April from 10 am until 5.30 pm. It is hoped that the Mayor of Moorabbin will open the display at 11 am.

17th MARCH

SPECIAL EFFORT NIGHT. FILM "BREAKER MORANT" SPECIAL.
Lucky tickets — Tea, Coffee, no Bonox, Biscuits free. Small charge for soft drinks.

SINGLE TICKETS	$2.50
FAMILY TICKETS	$5.00
CHILDREN	FREE

Special effort books still available from Ray Fowler. Ten tickets in a book. Each ticket $1.00. For any details ring secretary Alf Chandler VK3LC, 589 5344.

Contributed by John Hill VK3WZ.

AR

YOUNG NOVICE

Paul Walkins was born on 10th May, 1971 and is, as of 1st December, 1983, Q260371, VK4MPW. Paul is the youngest novice in the Central Queensland area.

Ron Smith VK4AGS held an Education Seminar in Rockhampton in July, 1983. After this Seminar, classes were formed and with the continued help and devotion of Clive Sait VK4ACC and a team of keen helpers, Lyle Dobbs VK4ALD, Col Lindsay VK4KCO, and Neil Coveney VK4YNC, some 18 students attended the classes aimed at sitting for the November examination.

Some students had absolutely no electronic understanding, some were advancing CB'ers and after the results of the examination, most

students passed the examinations that they sat. Not all students attempted all subjects.

However, one who did was Paul Watkins. Paul, the son of Peter VK4PH and has shared an interest in radio since he was about five years old. Peter kept Paul supplied with bits and pieces and encouraged him in every step.

Paul's first QSO was made on 19th December, 1983 at 1000 UTC on his father's TS520S and a G5RV. The QSO was with VK4WIR, the Central Queensland branch of the WIA.

Amateurs looking for Gracemere or Fitzroy Shire in the Queensland award will find Paul quite willing to give his Shire away.

The Rockhampton branch WIA meets on the third Friday each month at the North Rockhampton High School 0930 UTC and generally on 3.570 MHz ± Mondays at 1000 UTC.

AR

CW NETS

Two new nets are being tested by Maurie VK3CWB and Les VK3BPW of the North Western Zone of the WIA. Both nets are specifically for amateurs wishing to improve their prowess with the key.

NET 1: STRAIGHT KEY CW NET
Monday 0930 UTC 3.535 MHz +/- QRM (specifically for those who wish to improve their CW).
Speed approx 4-10 WPM.
All VKs welcome.
Callback on SSB — 3.545 MHz +/- QRM at 1100 UTC.
NB: For hand sending only — no keyers, bugs, keyboards etc please.

NET 2: NORTH WEST CW NET
Friday 1030 UTC 3.510 MHz +/- QRM (specifically aimed at full calls who want to improve their speed).
Speed 10-12 WPM minimum.
CW can be sent by any method.
Callback on SSB — 3.545 MHz +/- QRM at 1200 UTC.
All VKs and Internationals welcome.

AR

. . . And some people think the "Woodpecker" is the only problem . . .

Norman Campbell VK6UV

INTERNATIONAL NEWS

NEW OFFICE BEARERS

As a result of the untimely death of ARRL President Victor C Clark, W4KFC, on 25th November, 1983, Mr Carl L Smith, W0BWJ, became ARRL President and Mr Larry E Price, W4RA, became ARRL First Vice-President, in accordance with the provisions of the ARRL Articles of Association and By-Laws.

In accordance with Article V, paragraph 7, of the existing IARU Constitution, Mr Smith and Mr Price would therefore serve as IARU President and Vice-President, respectively.

However, as provided in Article V, paragraph 9, of the existing IARU Constitution, Mr Smith has declined to serve as President of IARU, citing the heavy workload resulting from his responsibilities as ARRL President. Therefore, Mr Richard L Baldwin, W1RU, having been previously nominated by ARRL to serve as IARU President, and having been previously confirmed by vote of the IARU membership, will continue to serve as IARU President.

Therefore, at least until the next election of ARRL Officers, which will take place in late March, 1984, Mr Richard L Baldwin, W1RU, and Mr Larry E Price, W4RA, will serve as President and Vice-President, respectively, of IARU.

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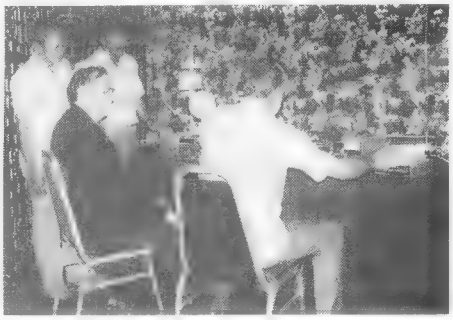

Mr Richard Butler, Secretary General ITU visiting 9M2CR/WCY satellite station.

AN AMATEUR RADIO LINK TO SPACE SHUTTLE

© 1983 P G CLARK.

When it was announced that Dr Owen Garriott would operate as W5LFL from the Space Shuttle "COLUMBIA" during the STS-9 mission a great deal of interest was generated within the amateur fraternity world-wide. W5LFL used a hand-held transceiver in the 2 metre amateur band. This was the first time that an amateur station had been operated from an orbiting manned spacecraft.

Interest in this expansion of 2 metre amateur radio was shown by an active group working at the Orroral Valley NASA Space Tracking Station situated in the Gudgenby Nature Reserve in the Southern part of the Australian Capital Territory. The Orroral Tracking Station supports the Space Shuttle missions by providing tracking, telemetry and voice contact whenever the orbitor is in range. The amateurs at Orroral Valley decided to investigate the possibility of establishing an amateur station at the Orroral Valley Space Tracking Facility for the purpose of contacting W5LFL on STS-9.

During the pre-mission period Dr Joe Kerwin, the NASA representative in Australia, was in contact with his ex-Skylab colleague Owen Garriott W5LFL. Dr Garriott proposed that a special test should be conducted to prove that amateur radio could be used as a viable backup communications link. Dr Kerwin asked the amateur group at Orroral Valley if they would undertake this experiment. Special frequencies were arranged and kept secure by Dr Kerwin until one hour before the experiment took place. Even the orbit to be used was not revealed until after the STS-9 mission had been launched.

Situated in the Canberra inner-southern suburb of Deakin, is the switching and communications centre. With Dr Kerwin's help, the amateur station was established at the centre. Much of the ground-work and liason with Dr Kerwin had been done by Richard Elliott, VK1ZAH and Paul Bell VK1BX.

Because of the number of amateurs involved, the special nature of the station, and the participation of NASA through Dr Kerwin the Department of Communications issued the special event call sign of VK1ORR for the duration of the STS-9 mission. Thanks are due to the Department of Communications for their understanding and ready cooperation with this experiment.

The choice of antenna was not simple because of the conflicting requirements that had to be met. As this Shuttle mission had a high inclination orbit of 57 degrees to the equator an omnidirectional antenna would have been desirable. The speed of a fast moving spacecraft posed problems for a directional antenna system. A combination of aerials was selected to cover as many possibilities as was reasonable. This combination was a steerable crossed 10 element yagi with switchable circular polarisation, a 5 element hotizontal yagi oriented to maximum elevation of the pass, and a ⅝ wavelength vertical whip. The antennae were mounted on a temporary scaffold erected on the roof of the Deakin Switching Centre. Semi-rigid, low-loss hardline was used to connect the antennae to the equipment. A low-noise GaAs FET preamplifier was used to improve the receiver noise figure.

The equipment used was provided by local amateurs and was configured in two chains. Alternative mains and battery power was available to all essential equipment. Three transceivers were used. These were an ICOM IC260A, an FDK 205 and an ICOM IC251A. The two main chains used Microwave Modules 100 W linear amplifiers with receiver preamplifiers.

This allowed two 100 W uplink paths. The prime receive path threshhold was — 140 dBm due to the GaAs FET amplifier. Special delayed transmitter keying was installed to disconnect the antenna-head GaAs amplifier before power was applied. Thanks must go to Richard Elliott VK1ZAH, Paul Bell VK1BX, Darryl Fallow VK1DF, Bob Henson VK1RR, and Bob Quick VK1ZQR, for their efforts in construction and installation of the equipment. The officers in charge of the Deakin Switching Centre, Mr Des Terrill and Mr John Warth, provided valuable assistance and advice during installation of the station.

On Monday evening, 5th December 1983, this historic test took place during orbit 110 of the STS-9 mission. The test proved an outstanding success and demonstrated that amateur radio could provide excellent emergency voice communication. The orbiter was passing from north-west to south-east directly over Melbourne. This pass allowed only six minutes for the contact. During his conversation with controllers in Houston, Owen Garriott said of VK1ORR: *"This is one of the best stations we have heard since we have been in orbit!"* A compliment indeed and a tribute to the performance of the VK1ORR station! Also present for this history-making experiment were the US Ambassador to Australia, Robert Nesen, and Senator Jake Garn of Utah, USA, a member of the NASA Appropriations Committee. The ambassador was able to exchange a few words with W5LFL during the contact which was coordinated by Dr Garriott's colleague, Dr Joe Kerwin.

The performance and success of this experiment was due to the dedication and determination of Dr Owen Garriott W5LFL, Dr Joe Kerwin, and Richard Elliott VK1ZAH, who were able to bypass international and bureaucratic boundaries by their personal involvement and interest.

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P G CLARK, VK2KPG
for the VK1ORR amateur group.

This copy released to "Amateur Radio" for publication by R W Elliott VK1ZAH for the VK1ORR amateur group.

AR

COMMERCIAL CHATTER

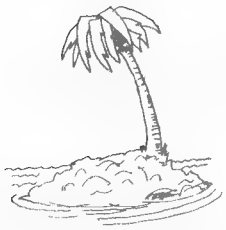
DICK SMITH OPENS IN SOUTHPORT, QUEENSLAND

As a convenience to our many customers who live in the Gold Coast, the important retailing centre of Southport has become the site for the latest Dick Smith Electronics store.

Now the Gold Coast's electronics enthusiasts (and enthusiastic beginners as well) will have, at their doorstep, everything from components to kits, home computers, telephone products, car sound systems, books on all facets of electronics, etc.

Located at the corner of the Gold Coast Highway and Welch Street, Southport, the phone number is (075) 32 9033. Store manager, Nigel Wickson (pictured here) and his specially trained staff are looking forward to serving you.

AR



HOW'S DX

Ken McLachlan, VK3AH
Box 39, Mooroolbark, Vic 3138

The bands have been quite reasonable with some excellent openings being heard on 21 and 28 MHz considering the state of the solar cycle.

Ten and fifteen metres can never be overlooked as it can bring many surprises. It is very seldom that I have missed out on a DX QSO when I call CQ on an apparently dead band. I probably cheat a little by using an endless tape on a cassette player patched into the transceiver on the VOX circuit. The thirty second tape is prerecorded and is programmed to call CQ twice for ten seconds with two listening periods of five. If a signal is received the VOX is locked off and the recorder is stopped. Simple yet effective.

An arrangement like this allows one to carry on with other work (catching up with QSL cards) and, most important, it does save the voice for the eventual QSO. The same system has been used in a couple of contests with a reasonable amount of success.

Speaking of contests, though not an avid contest enthusiast, I have found that they do improve one's operating ability and when you are caught up in the enthusiasm one can have a lot of fun.

There are numerous contests run by different societies throughout the world and I urge the DXer, whether a new chum or an old timer to have a hundred contacts or so, in one or two contests throughout the year and if not enthusiastic about sending in a contest sheet, send in a check log for the scrutineers. It is a big help.

LACCADIVE ISLANDS

Well the second group made it and in general were a lot more flexible in their operating habits than the initial DX operation.

Signals were better, they had split frequency capability and it is presumed that they had linears and/or beams. The Pacific area was well taken care of but unfortunately the European stations were very frustrated as one ISD phone call indicated that propagation was not favouring certain areas.

The operators of the second expedition were quite explicit in their QSL information and it was a credit to them that it was given so frequently. Perhaps the best operator that I heard was Chantilla VU2GO, who had the stamina to stay at the microphone for hours on end and cooly sort the QRM out.

The QSL info for the first expedition is VU2APR, Andhra Pradesh RS, 5B PS Nagar, Hyderabad, India and the second groups QSL arrangements are with VU2GDG, whose QTH per the International Call Book is GD Gopal, 233 Gopal Bagh, Avanashi Road, Coimbatore, India. An alternative address of PO Box 3755, Coimbatore, India has been circulated but its authenticity cannot be guaranteed. Take your pick or preferably put both addresses on the envelope.

BOTSWANA

Mel A22ME and his XYL A22TE have been quite active from this area on all bands. Mel is attached to the American Embassy in Gaborne and it is expected that the couple will be there for the rest of this year.

Direct QSL's for the couple should be sent to M Elazer, American Embassy Gaborne, Department of State, Washington, DC 20520, USA and they will be regularly forwarded to them in the Diplomatic Bag.

Another operator from this country is A24MF, who has the home call of DH2NAC. All QSL's to PO Box 149, Palapye, Botswana.

XU CARDS

You have not received your XU card yet and you are unhappy. Well they are on their way but there is a difficulty due to the problems of safely getting the logs back to the QSL Manager JA1HQG, and this manager will not let a card out of his possession unless it is checked and agrees with the log.

So please have patience they will be on their way as soon as possbile.

This seems to be the problem with the 1Z9A and associate calls too via their Manager JA8IXM. Getting the paper work from point A to point B is not very safe in some localities and we as amateurs are sometimes very critical of the postal system in this country, but, really we do not appreciate the trouble that Australia Post goes to to get items safely delivered across our vast continent.

160 METRES

Ron VK3BEE, has sent in a report of his CW activity on this band over the last couple of months.

Ron remarks that the band has been fairly noisy due to the frequent electrical storms though he did have some good openings between the 7th and 14th of December when P29PR, JH1HVF, JA7EVP, JH1NMO, JA1IEF, JA7AO, JA5DQH, JA7NI, JA1CHN, JH3CYZ appeared with others in the log. On the 30th December between 1030 and 1230 UTC JH1HVF was again worked.

Ron remarks that activity to the United States was generally poor except for the 11th January and the 73 Phone Contest when good signals were heard but none worked which was probably due to the QRM at that end.

Ron remarks that the best activity seems to be around 1600 to 1800 UTC (very early mornings in the eastern states) when on the 3rd of January UA9AJX on 1.849 MHz at 1700 UTC, SM7BIC on 1.835 MHz at 1732 UTC and DJ8WL on 1.832 MHz at 1850 UTC were the more outstanding contacts appearing in the log.

Thanks very much Ron, for your first contribution to this column and it is trusted that you and others can give the readers further updates from time to time.

TANZANIA

The Swedish operators that activated 5H3WCY late last year ended up with in excess of 8000 contacts. Most of the operation was on CW but they had 200 contacts on 80 metres and 1600 on 40 metres. In all 152 DXCC countries were contacted.

All QSL's for the operation go to SM0DJZ.

INTERNATIONAL DX CONVENTION

It is that time of the year again and a lot of DXers will be heading towards Visalia California for the convention to be held between the 13th and 15th of April and sponsored this year by Southern California DX Club. This has become known as the Westcoast DX Convention and this year again they have many guests. Some of the notables that have received invitations include 9N1OAT, XU1SS, HK0TU and TT8BC to mention but a few.

Any VK interested in attending should contact Fried or Sandi Heyn WA6WZO/ WA6WZN for further details.

TOGO

A much wanted country in the Pacific area and those needing it will be pleased to know that Jean 5V7JJ formerly FM7WA is active, mainly on CW. If you are successful in logging Jean, QSL to PO Box Niamtougou, Republic of Togo.

OSCAR-10 CAPABILITY

BY1PK now has the capability to receive and transmit on OSCAR frequencies. However there is a catch, they are not authorised to transmit in that portion of the frequency yet but it will come in the near future.

Who will be the first VK to contact them?

QSL'S STILL REQUIRED?

Remember Dr Rick Dorsch and his charming XYL Maria who used to operate from Ecuador and Galapagos under various call signs between 1974 and 1981. Well they still have all the log books and QSL cards for all their operations. If you have contacted WB8ABN/HC June/Dec '84, HC1EE '74/75, HC1MD '81/82, HC1MM '74/82, HC5EE '75/80, HD5EE '76 WPX Contest, HC7EE Sept/Nov '80, HC8EE '77 and Nov/Dec '80, HD8EE 1977, HD8CD '77, HC8MD Nov/Dec '81, HC8VHF Nov/Dec '81, HC8MM Nov/Dec '79, HC9A WPX SSB '81, HD9EE '81, HD9X WPX CW '79, HD0EE 77, and HD0E Oct 29/30 1978 and still want a card, write to Rick and Maria's new address, 1745 Oakstone Drive Rochester, Michigan 48063 USA.

AVES ISLAND

This expedition is still on and is expected around the first week of this month. Exact time is a little uncertain as the expedition is fitting in with the transport, the Venezuelan Navy. The expect to be there for about one week.

CONSIDERATION

It is on again, additions and deletions that is. The ARRL DX Advisory Committee are

believed to be considering the addition of the Pribilof Islands and wait for it, the deletion of the Baker, Howland and Phoenix group.

It has not happened yet, so do not worry until it actually happens but it is on the cards.

BOUVET ISLAND

Reliable sources say that the Automatic Weather Station on Bouvet will be serviced this month by a group enroute from the Antarctic. At this juncture it is not known if there will be any amateur involvement or whether there will be an amateur amongst the boarding party as there has been on previous occasions.

It would be advisable to work any strange activity or unusual prefix emanating from that direction. It is unfortunate but the pirates will have a ball with this one, but if it is genuine, one would never forgive themselves for passing up such an opportunity.

The last time it was activated, SM3RL had everything go wrong that could happen to anyone, such things as the antenna jammed in the wrong direction and the linear "blowing" up were commonplace but Lee made the QSO and was one of the few to gain it for a new DXCC country.

Good luck to everyone for this one.

CLIPPERTON

Expected to be QRV for five days around the second week of this month and will be operational on the usual DX frequencies.

SPECIAL CALLSIGNS

There will be special and unusual prefixes out of California to celebrate the 1984 Olympics which are being held in Los Angeles between July and August this year. It is also anticipated that there will be some strange prefixes around for the Winter Olympics also.

SOUTH SHETLAND QRT

Richard VP8ANT spent the last week of 1983 QSOing some 400 "customers" from Deception Island before he went QRT. He is now back home and QSL's to PO Box 146 Cambridge, England. No further operations are planned at this juncture.

SWL CARDS

Steve VK2PS, has received a number of SWL cards from 4X4, OK2, UC2, UA1, UA3, UA4, UB5, UA6, UA9, UA0 (five cards). This supports Steve's remarks about the importance of replying, so that these listeners can fill their administrations requirements of proof of a certain amount of listening over a given period. After fulfilling this prerequisite they may then sit for the licence and thereby gain their licence.

WCY SOVIET STYLE

Bob W5KNE, has printed such a heading in his excellent publication QRZ DX and it is reprinted in part so that the confusion regarding special calls that emanated from the USSR last year may be clarified.

The following list of WCY stations, the host club, oblast and DXCC Country should clear up some problems.

Call	Club	Oblast	DXCC Country
RT5WCY	UK5MAF	059	UB5
RC2WCY	UK2AAG	009	UC2
RD6WCY	UK6DAA	001	UD6
RF6WCY	UK6FAA	012	UF6
RG6WCY	UK6GAA	004	UG6
RH8WCY	UK8HAA	043	UH8
RI8WCY	UK8ABI	053	UI8
RJ8WCY	UK8JAA	040	UJ8
RM8WCY	UK8MAA	036	UM8
RO8WCY	UK5OAA	039	UO5
RP8WCY	UK2BBB	038	UP2
RQ2WCY	UK2GAB	037	UQ2
RR2WCY	UK2RAN	083	UR2
RV1WCY	UK1ADZ	169	UA1
RV3WCY	UK3ADZ	170	UA3
RV4WCY	UK4FAV	148	UA4
RV6WCY	UK6LAA	150	UA6
RV9WCY	UK9CAA	154	UA9
RV0WCY	UA0AMM	103	UA0

This was originally published in the Soviet Patriot and was translated for Bob by NC5K.

Lee KH6BZF, an ardent DXer and the weekly propagation report editor of KH6BZF reports.

A FEW QTH's

EA9EQ Juan, PO Box 21, Melilla, North Africa.

EA9KQ PO Box 21, Melilla, North Africa.

FK8EB PO Box 224, Noumea, New Caledonia.

FM7WA/5A BP 123, Lome.

FM7WH Leo Duillet, Route de L'Union Voie 8, Didier, Fort de France, Martinique.

FO8JP Pierre Jean Thomasa, BP 96, Bora Bora Island, French Polynesia.

FO8KS PO Box 5252, Pirae, Tahiti.

H5AE Paul, PO Box 3838, Mabatho, Rep of Baphuthatswana.

H5AF Christine, PO Box 3838, Mabatho, Rep of Baphuthatswana.

HK3NNB PO Box 3831, Bogota, Columbia.

HT1JCC Jose, PO Box C-89, Managua, Nicaragua.

J28DX BP 1076, Djibouti.

J28DQ BP 1076, Djibouti.

J6LLO PO Box 800, Castries.

KD8CE/J8 PO Box 101, Castries.

KC6VD Vin, PO Box 220, Truck, Eastern Carolines, 96942 USA.

PZ1DV Ron, PO Box 9006, Paramaribo, Surinam.

S79SM PO Box 84, Mahe, Seychelles.

T2ADE Chris Roberts, PO Box 5, Funi Futi, Tuvalu, Central Pacific.

TR8JLD PO Box 484, Libreville, Gabon.

TZ6BMA Andre, PO Box 198, Bamakop, Mali.

V83PMP PO Box 6538, Bombay 26, India.

XE1MR PO Box 53133, Mexico City, Mexico.

YJ8MP PO Box 819, Port Vila, Vanuatu.

Z21AO PO Box 502, Selous, Zimbabwe.

ZK1GC PO Box 119, Raratonga, Southern Cook Islands.

ZL0AHX PO Box 17, Bulls, NI, New Zealand.

SSB WORKED ON THE EAST COAST

28 MHz

9K2DZ, A71AD, A92DQ, I2XIP, IK6AQU, JD1BBG, KL7LF, OF2BOZ, RU9WCY, SP3HLM.

21 MHz

DF5BW, G3FZG, HL0U, RU9WCY, SP3HLM, UX5OO, Z21BP, ZK9RW.

14 MHz

4S7VK*, 4S7WP*, 4T4WCY, 9M42HB, 9U5JB, AH9AB, AP2MQ, BY1AA*, BY1PG*, FO8EW*, FR0GA, HL1MV, HL1NK, I4ASI, I8SAT, JT1AO, JY1, JY3ZH, JY9RQ, KA8HW*, KH2BE, KX6AO, KX6DS*, LA5LT*, LZ0WCY, LZ2SD, OD5AS, OE6AM*, RV8WCY, RV8WCY*, T2ADE, T30AT, T30DB, TI2CCC, TI2VVR, UK2GAB*, UK2GAY*, UL7AAS*, UQ2GLO*, VK0VK, VU2JN*, VU2KX, VU7WCY, VU7WCY*, YO8WCY, YO8WCY*, ZL1AMN, ZL7OY.

7 MHz

JE1FIG, VS6DO.

3.5 MHz

T2ADE.

** Denotes CW.*

INTERESTING CARDS RECEIVED

4S7EA, 4S7VK, 5Y4RK, 8Q7AV, A71AD, AP2MP, EA2ALW, EA7AUN, EA7CUM, EA7DUV, EA8AFB, FO8AA, GI3AXI, IT9VQC, KH7AA, OH7KB, T30AT, UA0CDK, UA0TE, UA1OBW, UB5LAW, UK2RDX, UK4FAD, UT5HP, VE1ASU, VK9ZJ, VP8ANT, VS5GA, VS6DT, XU1SS, XU1YL, YJ8AMM, YO7ARZ, YO8CF.

CW SWLING WITH ERIC L30042

28 MHz

VK4AGD, VK4LX.

21 MHz

FK8CE, HA7TM, HL0C, LA3UL, OE3UP, OH2RF, P29PR, SM7ZI, T30CT, TO5CH, UK2GDZ, UV3GAJ, UK8EAB, VK8RP, VU2BK, YC2BDJ, YU5IM, ZS6AEI, 4S7BBG, 4Z4NUT

14 MHz

CO2HT, CT2EC, C21NI, EA7CJM, F2PI, FG7AM, FO8EW, G3RGD, HI8LC, HK3YH, I2YWR, KX6OH, P29PR, T30AC, UA9OEL, VK8XX, VK9NS, VU7WCY/TS, VS6HI, YB8AX, YV5ANE, 4X4JJ, 9M2HB, 9V10K.

10 MHz

C21NI, DJ6OY, G6ZY/EA6, DL7AD/EA8, G3JFF, HB9KX, JA1BTA, VE1BB, W1FZY, W2ERJ, W3GG, W5BFI, K6MEH, W8EGB, N4SU

7 MHz

A4XJP, OH2BEN/CT3, CT1ZX, DL6WD, VE3BVD/DU6, EA4MY, F9HR, FK8CC, G4TOZ, HB9BAJ, HL4XM, I2YSB, K0AX/KH2, KX6DS, LX1PD, KH6CF, LZ2RS, OE3UP, ON4AZ, PA0OI, P29PR, UK2FBR, UW3ZV, UK5EAA, UY5OO, UO5GQ, UM8NAV, UK9CAA, VU83TS, VU7WCY/TS, YU7QDT, YC2BDJ, Y55XE, 4S7EMG, 5Z4MX.

3.5 MHz

HA4ZZ, JA5CZE, KH6CF, LZ1KSN, OH2VY, UK2FAA, UK5XBA, UA0BCV, YU3DIM.

1.8 MHz

VK2ALN, VK5BC, VK5AFA, VK5KL, VK5KO

QSLs RECEIVED BY ERIC L30042

C31IU, DJ4LO, DL7AD, DL7AD/EA8, F8VN, FG7BG, G2RF, VE3LUG, W3QBK, 4X4WF, 9H1BB, (all 10 MHz). AL7H, BY4AA, CM2TM, CT2FN, ZL2BKM/C, EC3AFM, FC8TT, GU5BLG, HK3NBB, J28DP, KH6AQ, OX5JM, SJ9WL, SU1ER, UC2SKZ, XE1SV, Y4IZM, ZL7WCY, 3D6AK (3.5), 5Z4YV, 9M2MO.

A CLOSING LIMERICK

This limerick appeared in QRZ DX which was written by WA4JTI and it is dedicated to the amateur that cannot hear the station he is calling and that is quite frequent.

A DXer not knowing the call,
Entered a pileup deep wall to wall,
After calling all day,
Much to his dismay,
He found that he had worked Montreal.

THANKS

Thanks are extended to such magazines as OZ, WORLD RADIO, RADCOM, QST, cqDX, VERON and weekly newsletters including DXNEWS, QRZ DX, LONG SKIP which have provided the writer with interesting reading. Australian amateurs who have contributed include VK2PS, 3BY, FR, UX, YJ, YL, AQZ, BEE, PNL, VSL, 6NE and L30042. Overseas amateurs include ON7WW, I8SAT, G3NBC, ZL1AMM and ZL1AMN. Sincere thanks to one and all and good DXing.

CONTESTS

VK5 wins 1983 RD Contest

Reg Dwyer, VK1BR
FEDERAL CONTEST MANAGER
Box 236, Jamison, ACT 2614

MARCH

1	*St David's Day Special Event Station*
3-4	*ARRL DX Phone*
10-11	*QCWA Phone QSO Party*
17-18	*Bermuda Test*
17-18	*YL ISSB CW QSO Party*
17-18	*BARTG RTTY Test +*
24-25	*CQ WW WPX SSB Phone Test*

APRIL

7-8	*Polish CW Test +*
14-15	*Polish Phone Test +*

MAY

26	*CQ WW WPX CW Test*

JUNE

9-10	*ARRL Test ++*
9-10	*South American CW Test ++*
16-17	*All Asian Phone Test ++*
23-24	*ARRL Field Day ++*

JULY

7-8	*Venezualan Phone ++*
14-15	*International QRP Test ++*
21-22	*Venezualan CW ++*

NOTE: The + Signifies an Unconfirmed Contest.

FURTHER ON THE RD TEST

The weighting factors for the 1983 RD Test were published prior to the test for the benefit of all to see and to provide an incentive for the contestants as to how they will fare if they performed as they previously had performed over the past eight to ten years.

The formula is calculated using the number of contacts made and the number of licences issued per division. This figure, referred to as the raw scores, are then used with a weighting factor. In fact a multiplier to equalise all the divisional scores if each division performs as they previously have trended to.

1983 WEIGHTING FACTORS

DIVISIONS	PREDICTED	FINALS
VK1	*1.15*	*1.869*
VK2	*9.58*	*13.7606*
VK3	*7.16*	*8.8944*
VK4	*5.33*	*8.65019*
VK5	*1.76*	*1.7599*
VK6	*1.22*	*2.1495*
VK7	*0.084*	*2.426*

As can be seen from the results, a few of the divisions have altered their performances in accordance with the published weighting factors, but in the main, the resulting weighting factors show that the usual trend of participation and scoring has been followed as it has been over the past years.

TABLE 1A RAW SCORES

VK	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
1	*35.9*	*29.1*	*38.6*	*57.1*	*75.9*	*33.9*	*31.9*	*28.7*	*20.1*	
2	*4.4*	*6.7*	*5.2*	*5.2*	*7*	*5.8*	*3.5*	*4*	*2.73*	
3	*5.5*	*7.3*	*6.7*	*9.1*	*9.5*	*7*	*4.6*	*5.1*	*4.23*	
4	*24.9*	*30*	*25.3*	*20.6*	*14.5*	*15.7*	*8.2*	*5.83*	*4.34*	
5/8	*21.8*	*32.7*	*37.3*	*22.6*	*30.5*	*25.6*	*25.6*	*25.1*	*21.3*	
6	*19.3*	*19.6*	*33.8*	*32*	*32.9*	*33.3*	*28.5*	*28.4*	*17.49*	
7	*18.5*	*20*	*26.5*	*37.1*	*49.7*	*41.8*	*39.2*	*25.3*	*15.5*	

TABLE 1B WEIGHTING FACTORS

VK	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
1	*1*	*1.12*	*1*	*1*	*1*	*1.23*	*1.23*	*1.01*	*1.869*	*1.48*
2	*8.16*	*4.89*	*7 39*	*10.9*	*10.8*	*7.8*	*11.2*	*7.1*	*13.76*	*11.91*
3	*6.53*	*4.48*	*5 73*	*6.3*	*8*	*6.01*	*8.59*	*5.63*	*8.894*	*8.21*
4	*1.44*	*1.09*	*1 52*	*2.77*	*5.22*	*2.67*	*4.77*	*4.88*	*8.65*	*7.55*
5	*1.65*	*1*	*1.04*	*2.53*	*2.49*	*1.63*	*1.55*	*1.13*	*1.76*	*1.72*
6	*1.86*	*1.67*	*1.14*	*1.78*	*2.31*	*1.26*	*1.37*	*1*	*2.15*	*1.54*
7	*1.94*	*1.64*	*1.46*	*1.54*	*1.53*	*1*	*1*	*1.12*	*2.43*	*1 43*

The predicted weighting factors for 1984 are:

VK	W/F
1	*1.48*
2	*11 91*
3	*8.21*
4	*7.55*
5	*1.72*
6	*1 54*
7	*1.43*

The 1984 figures are the predicted figures for use by the contests manager during the compilation of the 1984 results.

1983/84 CONTEST RESULTS

VK	JM	RD	VK/ZL	NOVICE	TOTAL
3XQ	*10*			*7*	*17*
2KFJ	*9*			*N/E*	*9*
6NSD	*10*			*9*	*19*
3CGH	*9*			*8*	*17*
5QX	*8*			*16*	*24*
3KI	*7*			*N/E*	*7*
4NDW	*6*			*N/E*	*6*
3DAW	*5*			*N/E*	*5*
3VF	*4*			*N/E*	*4*
2JM	*10*			*N/E*	*10*
3BKU	*9*			*8*	*9*
3BAF	*10*			*N/E*	*10*
2EL	*10*			*N/E*	*10*
3SP	*9*			*N/E*	*9*
5YO	*8*			*N/E*	*8*
2TR	*10*			*N/E*	*10*
4AOF	*9*			*N/E*	*9*
5DL	*8*			*N/E*	*8*
3LC	*10*			*N/E*	*10*
3XB	*9*			*9*	*9*
2BQS	*8*			*10*	*18*
1DL	*7*			*N/E*	*7*
7AL	*6*			*N/E*	*6*
3DAK	*5*			*9*	*5*
7NIM	*4*			*N/E*	*4*
3KCC	*3*			*N/E*	*3*

N/E = NOT ENTERED.

These are a sample of the scores that are achieved by the entrants in the contests nominated for the Contest Champion Trophy. It is not feasible to print the scores of all the entrants but those of you who are interested in their position can easily ascertain their score from the printed results.

VK NOVICE 1983 CONTEST RESULTS

Callsign	Section	Score	Club	Contest	Champion Points
ZL2BON	*B*	*0030*			
ZL1IM	*A*	*0139*			
ZL1AMM	*A*	*0022*			
VK7FD	*A*	*0146*	*C/C 10*		
VK6QH	*A PH*	*0178*	*C/C 07*		
VK6NSD	*A*	*0460*	*C/C 09*		
VK6NCW	*A*	*0219*	*C/C 08*		
VK6NCR	*A*	*0536*	*C/C 10*		
VK6CZ	*A*	*0160*	*C/C 06*		
VK6AGF	*A/CLUB*	*1124*	*VK6AGF*		
VK5QX	*A*	*0431*	*C/C 08*		
VK5QX	*B*	*0006*	*C/C 08*		
VK5NOD	*A*	*0861*	*C/C 10*		
VK5GZ	*A*	*0336*	*C/C 07*		
VK5GZ	*B*	*0044*	*C/C 09*		
VK5FF	*A*	*0688*	*C/C 09*		
VK5AFX	*B*	*0083*	*C/C 10*		
VK5ABW	*A*	*0080*	*C/C 06*		
VK4XA	*B*	*0156*	*C/C 10*		
VK4WIT	*A CLUB*	*0035*	*VK4WIT*		
VK4WIS	*A CLUB*	*0489*	*VK4WIS*		
VK4SF	*B*	*0032*	*C/C 06*		
VK4NYE	*A*	*0532*	*C/C 09*		
VK4NUN	*B*	*0058*	*C/C 07*		
VK4NRZ	*B*	*0114*	*C/C 08*		
VK4NME	*A*	*0154*	*C/C 05*		
VK4KNW	*A*	*0537*	*C/C 10*		
VK4KAE	*A*	*0253*	*C/C 08*		
VK4AVR	*A*	*0224*	*C/C 06*		
VK4AOR	*A*	*0248*	*C/C 07*		
VK4ANY	*B*	*0149*	*C/C 09*		
VK3XQ	*A*	*0698*	*C/C 07*		
VK3XF	*A*	*0083*	*C/C 02*		
VK3XB	*B*	*0151*	*C/C 09*		
VK3WP	*B*	*0024*	*C/C 07*		
VK3WP	*A*	*0599*	*C/C 06*		
VK3PFG	*A*	*0578*	*C/C 05*		
VK3PDK	*B*	*0168*	*C/C 10*		
VK3KS	*A*	*0045*			
VK3KS	*B*	*0022*	*C/C 06*		
VK3KHI	*A*	*1652*	*C/C 10*		
VK3KAV	*A*	*0334*	*C/C 03*		
VK3DKS	*A*	*0524*	*C/C 04*		
VK3DAK	*A*	*0806*	*C/C 09*		
VK3CGH	*A*	*0749*	*C/C 08*		
VK3BKU	*B*	*0030*	*C/C 08*		
VK3AVB	*A*	*0079*	*C/C 01*		
VK2PQN	*A*	*0172*	*C/C 04*		
VK2PMH	*A*	*0201*	*C/C 05*		
VK2PLO	*A*	*0391*	*C/C 08*		
VK2PFW	*A*	*0168*	*C/C 03*		
VK2NKN	*A*	*0097*	*C/C 02*		
VK2KCN	*A*	*0403*	*C/C 09*		
VK2EZB	*A*	*0260*	*C/C 06*		
VK2DXS	*A CLUB*	*0716*	*VK2DXS*		
VK2BQS	*A*	*0499*	*C/C 10*		
VK2AHD	*A*	*0360*	*C/C 07*		
VK1NEU	*A*	*0114*	*C/C 08*		
VK1LF	*A*	*0147*	*C/C 09*		
VK1KPJ	*A*	*0855*	*C/C 10*		
RAMSAY	*C*	*0214*			
L60036	*C*	*0308*			
L30042	*C/CW*	*0102*			
L30037	*C*	*0637*			
L10071	*C*	*0560*			

THE 27th ANNUAL CQ WORLD WIDE WPX CONTEST

SSB: March 24-25 1984
CW: May 26-27 1984
Starts: 0000 UTC Saturday
Ends: 2400 UTC Sunday

Contest Period: Only 30 hours of the forty eight hour contest period permitted for Single Operator stations. The eighteen hours of non-operating time may be taken in up to five periods anytime during the contest, and must be clearly indicated on the log. Multi-operator stations may operate the full forty eight hours.

Objective: Object of the contest is for amateurs around the world to contact as many amateurs in other parts of the world as possible during the contest period.

Bands: The 1.8, 3.5, 7, 14, 21 and 28 MHz bands may be used.

Type of Competition: 1. Single Operator (a) All Band, (b) Single Band. 2. Multi-operator, All Band *only*. (a) Single Transmitter (only one transmitter and one band permitted during the same time period, defined as ten minutes, no exception), (b) Multi-Transmitter (one signal per band permitted). **NOTE:** All transmitters must be located within a 500 metre diameter or within the property limits of the station licensee's address, whichever is greater. The antennas must be physically connected by wires to the transmitter.

Exchange: RS(T) report plus a progressive three-digit contact number starting with 001 for the first contact. (Continue to four digits if past 1000.) Multi-transmitter stations use separate numbers for each band.

Points: Contacts between stations:

Europe, Asia, Africa, Oceania, S. America

A) Contacts outside of own continent count three points on 28, 21, 14 MHz, and six points on 7, 3.5, 1.8 MHz.

B) Contacts with other countries on own continent count one point on 28, 21, 14 MHz, and two points on 7, 3.5, 1.8 MHz.

C) Contacts within own country count **0** points but are permitted for prefix multiplier credit.

Multiplier: The multiplier is determined by the number of different prefixes worked. A "**PREFIX**" is counted once during the entire contest regardless of how many times the same prefix is worked.

A "**PREFIX**" is considered to be the three letter/number combination which forms the first part of an amateur radio call (N1, W2, WB3, K4, AA6, WD8, 4X4, DL7, G3, IT9, KH2, AL7, NP2, WP4, 9M2, CT9, 4J9, PY7, VK4, JE3, VE3, Y32, Y33, Y45, AN8, AB8, H44, KT4, etc.) A station in a call area different than that indicated by its call sign is required to sign portable. The portable prefix would be the multiplier. Example: W8IMZ/4 would count for prefix W4 only and W8IMZ/LX would count for prefix LX0 only.

Special event, commemorative, and other unique prefix stations are also encouraged to participate.

Scoring: 1. Single Operator (a) All Band score, total QSO points from all bands multiplied by the number of different Prefixes worked. (b) Single Band score, QSO points on the band multiplied by the number of different Prefixes worked.

2. Multi-Operated stations. Scoring in both these categories is the same as the All Band scoring for Single Operator.

3. A station may be worked once on each band for QSO point credit. However, prefix credit can be taken only **once** regardless of the number of different bands on which the same station and/or prefix has been worked during the entire contest.

QRPp Section: (Single Operator Only). Power must not exceed five watts output to qualify for QRPp section competition. You must denote QRPp on the summary sheet and state the actual maximum power output used for all claimed contacts. Results will be listed in a separate QRPp section and certificates will be awarded to each top scoring QRPp station in the order indicated in Section X. These certificates will be marked QRPp and will show your power output. QRPp stations will be competing only with other QRPp stations for awards. All other information contained in these rules is applicable to this section.

Awards: Certificates will be awarded to the highest scoring station in every participating country and in each call area of the United States, Canada, Australia, and Asiatic USSR.

All scores will be published. However, to be eligible for an award, a Single Operator station must show a minimum of twelve hours of operation. Multi-operator stations must show a minimum of twenty four hours.

A single band log is eligible for a single award **only**. If a log contains more than one band, it will be judged as an all band entry, unless specified otherwise. However, a twelve hour minimum is required on the single band.

In countries or sections where the returns justify, second and third place awards will be made.

Trophy and Plaque winners may win the same award *only* once within a **TWO** year period. This does not apply to any QRPp, Club, Expedition or *CQ* Special Awards. A station winning a World Trophy will not be considered for a sub-area award. That Trophy will be awarded to the runner-up for that area.

Club Competition: A trophy will be awarded each year to the club or group that has the highest aggregate score from logs submitted by members. The club must be a local group and not a national organisation. Participation is limited to members operating within a local geographical area. (**Exception: DXpeditions especially organised for operation in the contest and manned by members**.) Indicate your club affiliation. To be listed, a minimum of three logs must be received from a club.

Log Instructions: 1. All times must be in UTC. The eighteen hour non-operating periods must be clearly shown.

2. Prefix multipliers should be entered only the FIRST TIME they are contacted.

3. Logs must be checked for duplicate contacts and prefix multipliers. Recopied logs must be in their original form, with corrections clearly indicated.

4. An alphabetical/numerical check list of claimed PREFIX multipliers must be sent along with your contest log. (A prefix is counted one time only.)

5. Each entry must be accompanied by a Summary Sheet listing all scoring information, the category of competition, and the contestant's name and mailing address in BLOCK LETTERS.

Also submit a signed declaration that all contest rules and regulations for amateur radio in the country of the contestant have been observed.

Disqualification: Violation of amateur radio regulations in the country of the contestant, or the rules of the contest, unsportsmanlike conduct, taking credit for excessive duplicate contacts, unverifiable QSO's or multipliers will be deemed sufficient cause for disqualification. Actions and decisions of the **CQ WPX Contest Committee** are official and final.

Deadline: All entries must be postmarked no later than 10th May, 1984 for the SSB section and 10th July, 1984 for the CW section. Indicate SSB or CW on the envelope. From rare isolated areas the deadlines will be made more flexible. Your support is appreciated.

Logs go to: CQ Magazine, WPX Contest, 76 N Broadway, Hicksville, NY 11801 or to the **new** WPX Contest Director: Steve Bolia, N8BJQ, 7659 Stonesboro Dr, Huber Heights, OH 45424 USA.

HELVETIA CONTEST

LAST FULL WEEKEND OF APRIL EACH YEAR: April 1984 28/29th, 1300-1300 UTC, CW and/or Phone mode

Frequencies: 160 - 80 - 40 - 20 - 15 - 10 metre bands (in accordance with IARU-band-planning)

Reports: RS(T) plus a 3-figure number, starting with 001. HB-stations are giving an additional code of 2 letters, indicating their canton (Example: 579 001/BE)

Canton Code is part of the report and must be in log

Canton-codes: AG-AI-AR-BE-BL-BS-FR-GE-GL-GR-JU-LU-NE-NW-OW-SG-SH-SO-SZ-TG-TI-UR-VD-VS-ZG-ZH (total 26)

Scoring: Each HB-station can be contacted once per band, either CW-CW or Phone-Phone mode. Only QSO's with full exchange of contest data logged, are credited for the score.

Points: Each QSO with a HB-station counts three points.

Multiplier: Each canton per band counts as one multiplier.

Final-score: Total of the QSO-points multiplied by the sum of cantons gives the final-score.

Log-Instructions: If there is more than one logsheet, the QSO's must be separated per band. A multiplier-checklist will be appreciated (back side of summary-sheet). Use a summary-sheet and indicate clearly: Call, name, address, single- or multi-operator/number of QSO's, points and multipliers per band and total of them with final-score/station description and power-output/declaration, that rules of the contest and license-regulations have been observed, duplicate QSO's are eliminated, amateur-spirit and sportmanship were respected and decisions of the contest-committee are finally/date and signature.

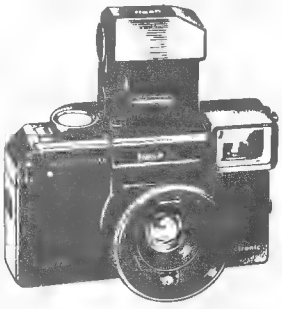
Contest awards: To top-scorers in each country, USA- and VE-call areas, provided a reasonable score is made in recognition of the stations distance from HB-land. Multi-operator stations are handled separately.

Deadline: Please mail your log (or a *good copy*, please) within 30 days after the contest to: Gody Stalder, HB9ZY, Tellenhof, CH-6045 Meggen Switzerland.

In the 1983 contest the Oceania Results showed VK4XA as the top scorer with 990 points. Second and third respectively were ZL3AGI 462 points and ZM1AMM 90 points.

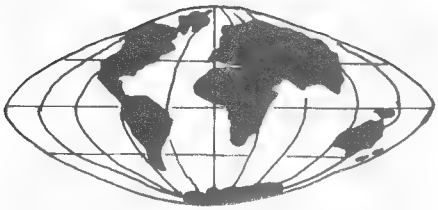
AR

FEBRUARY'S BEST PHOTOGRAPHS



For the month of February the judges of the Photo Competition selected two photographs by VK3ASS on page 13 by Agfa-Gevaert. Photo 1 on page 9 by Waverley Offset Printing Group and Dick operating 10 GHz by Quadricolor Industries Pty Ltd.

These photographs will now be considered for the Agfa camera prize at the end of the competition with the June issue.



VHF UHF - an expanding world

Eric Jamieson, VK5LP
1 Quinns Road, Forreston, SA 5233

All times are Universal Co-ordinated Time, indicated as UTC

AMATEUR BAND BEACONS

FREQ	CALLSIGN	LOCATION
50.005	H44HIR	Honiara
50.008	JA2IGY	Mie
50.020	GB3SIX	Anglesey
50.060	KH6EQI	Pearl Harbour
50.075	VS6SIX	Hong Kong
50.945	ZS1SIX	South Africa
51.020	ZL1UHF	Auckland
52.013	P29SIX	New Guinea
52.150	VK0CK	Macquarie Island
52.200	VK8VF	Darwin
52.250	ZL2VHP	Palmerston North
52.300	VK6RTV	Perth
52.310	ZL3MHF	Christchurch
52.320	VK6RTT	Carnarvon
52.350	VK6RTU	Kalgoorlie
52.370	VK7RST	Hobart
52.420	VK2RSY	Sydney
52.425	VK2RGB	Gunnedah
52.440	VK4RTL	Townsville
52.465	VK6RTW	Albany
52.470	VK7RNT	Launceston
52.510	ZL2MHF	Mount Climie
144.019	VK6RBS	Busselton
144.420	VK2RSY	Sydney
144.465	VK6RTW	Albany
144.475	VK1RTA	Canberra
144.480	VK8VF	Darwin
144.550	VK5RSE	Mount Gambier
144.600	VK6RTT	Carnarvon
145.000	VK6RTV	Perth
147.400	VK2RCW	Sydney
432.057	VK6RBS	Busselton
432.410	VK6RTT	Carnarvon
432.420	VK2RSY	Sydney
432 425	VK3RMB	Ballarat
432.440	VK4RBB	Brisbane
1296.171	VK6RBS	Busselton

NEWS FROM THE WEST

A letter is to hand from Wally VK6KZ which as usual is full of interesting news. The following extracts should be of interest to readers.

"The Ross Hull Contest occupied most of my time over Christmas and New Year, am now back at work, just in time to miss the openings across The Bight on 9/10/12 January on bands up to 2304 MHz! The influence of better 6 metre DX was very evident on my contest scores. Four of my seven best UTC days in the 1982/83 Contest were with 6 metre DX whereas this year it was seven out of seven! The improved gear on 576 and 3456 MHz also meant I had seven bands every day whereas in 82/83 this was limited to four days, with one day being five bands and two days six bands only. Certainly the incentive is to build gear for the higher frequencies as some of the keen competitors over the east have done. The overall number exchanged was 1641 in 83/84 compared with 1645 in 82/83. Certainly the Ross Hull requires a lot of intense and prolonged enthusiasm for the serious competitor. Activity has been boosted a lot by the Contest.

"Some observations on the December - mid-January season. The SW Pacific islands became much prized over here with the weak signals from FK0, FK8, VK9, A35 and ZL being hard to drag through the strong VK2, 3, 4 and 5 signals. Certainly the use of 52.050 MHz by those DX stations didn't help us! Alan VK6ZWH at Busselton (200 km south of Perth) and Peter VK6ZPG (210 km north of Perth) both worked VK0CK but no one from Perth achieved this. FK0 and FK8 were worked by a number of amateurs including VK6's SM, BA, WD, KZ, RO, ZWH, ZPG and Wayne VK6WD worked VK9WCY. It appears no one worked A35.

"Tropospheric propogation was generally poor with Steve VK6ASF at Exmouth only being worked about twice on 144 MHz. Of considerable interest is the reported reception of very weak signals on 3456 MHz of Reg VK5QR by Wally VK6WG at Albany. Wally is very confident he had enough of Reg's keyer to confirm the identity of the signal. This was on 22/12/83 in the early hours of the morning.

"My own thrill was to work Don VK6HK at Wembley Downs in Perth on 3.5 GHz from Busselton on Friday 13th January at 0910 UTC. This is a 199.8 km path and will be the subject of a claim for a new Australian DX record beating the former figure of 114.1 km. Signals were subject to deep QSB with Don giving me a 5x2 report and I giving him a 529 report. His phone was copied on some occasions but we didn't risk delays in making a two way contact!! The 1296 MHz VK6RBS beacon was of great value in showing that the path was possible. The most important observation was that peaking the 900 mm dish was very important on 3.5 GHz and 1296 MHz was used to assist this process.

"Amongst other thoughts I have on the Ross Hull Contest rules, I believe some incentive is still necessary to encourage the 6 and 2 metre operators only — under the present rules most of these do not put in logs as they cannot hope to compete with those stations having four or more bands in operation."

THE QUEENSLAND SCENE

Steve VK4ZSH has written briefly to say that with the exception of VK0CK who was only heard weakly and briefly, all VK, ZL districts, plus FK and A35GW, ZL4OY/C were available for hours on end on 26/12 with good signals, with YJ8, H44, P29 and JA coming in occasionally. Surprisingly, no ZL's worked on 2 metres on this day but their beacons heard several times.

"On 144 MHz the scene reads very interestingly: 14/12: meteor scatter skeds with VK1VP after several mornings almost making it, finally completed a contact at 1291 UTC. The contact took fifty one minutes which included thirty six minutes lost due to a fault developing in the 12 element long yagi, the contact was finally completed a contact at 1921 UTC. The longest burst, twenty seconds with signals to S9+.

"17/12: 2355 brief Es opening to Cairns area.

"21/12: 0140 to 0230 Es, at work, but John VK4KJL worked VK3, 5, 7. 23/12: 0726 to 0844 Es and worked VK5ATD, VK5DJ, VK5MC. The 144.550 beacon very strong; next morning, same UTC day worked Gordon VK2ZAB in Sydney on tropo 5x5 plus reception of 144.420 beacon. 24/12: exceptionally strong signals from Bundaberg.

"25/12: Christmas present, best 2 metre Es ever heard. 0120 to 0315 worked VK5ZDR, VK5ZBU, VK5ZK, VK5RO, VK5ZRK, VK7ZOO to complete my Worked All States, VK5DI, VK7DA, VK3YJM, VK3XEX. 0350 FK8AX Noumea heard Brisbane repeater output at 5x9 but no contacts. He now knows about 144.100 and has 200 watts to 4x2 element quad. 26/12: 0100 brief weak signals from Alice Springs."

Congratulations on the WAS Steve, a fine effort. Some may ask who did Steve work in VK6. The answer is John VK6GU in Wyndham whom he worked via a scatter contact some time ago!

TWO METRE NEWS FROM NEW SOUTH WALES

I am sure this letter from Gordon VK2ZAB will contain further interesting news about 2 metres and above so here are the pertinent extracts:

"December — what a month that was! The VK2 2 metre and 70 cm activity was exceptionally high and during the last quarter in particular the number and extent of contacts made via tropospheric and ionospheric anomalies exceeded any similar period I have experienced.

"My log lists 152 out of Sydney contacts for December and as usual I am torn between the desire to mention them all and the need to keep it reasonably short! Suffice to say that all the usual stations to the south west, west, north and north east and in VK1, VK3 and VK4 have been heard and worked from this QTH. This report will be restricted to the more unusual contacts as there are plenty of those.

2/12/83: 2243 Allen VK2KAW came up to 5x5 after I had worked VK2EJJ both stations in Wagga. Allen hadn't been heard for some time due to ATV and antenna changing activities. 3/12: 2319 and also after working VK2EJJ, Doug VK2ZMP came up at 5x2 and had not been worked for quite a long time. 8/12: 1137 worked Bob VK2DSM at Orange 5x2. 9/12: 2022 Ross VK2DVZ in Taree started his run of many contacts into Sydney with a 5x4 signal here. Bill VK2ZCV at Port Macquarie 5x3 a little later.

10/12: 2036 Owen VK1CAE was 5x5 in Sydney while mobile at Mount Ainslie with 10 watts PEP and a four element yagi on the roof rack. 12/12: Brian VK2AKU at Narrabri was 5x2 at 0931; 16/12: 2045 Tom VK2DDG at Byron Bay 5x3 in Sydney. Also same day Doug VK3UM was up to 5x2 at times for half an hour from 2130. 17/12: Frank VK2QC at Narooma 5x5 after an absence of some

months. 18/12: at 2324 Jock VK2ZQX near Gunnedah worked Richie VK4RR and Paula VK4KIZ in Cairns at 5x1 each way. At about this time we began to hear rumours of extensive Es openings on 2 metres between various States. Bill VK4LC and Doug VK3UM confirmed during our weekend skeds that they had experienced sudden increases in signal level from me just as I had from them. The increases were of short duration but somehow unlike meteor pings as they had square ends (meteor pings have a sharp front and a tapering tail.) Obviously the ionosphere was stirring for 2 metres as it had been on 6 metres.

20/12: 0900 Henry VK2ZHE was 5x9 in Sydney from Port Macquarie. At 1014 Bill VK2ZCV was 5x3 while mobile at Port Macquarie and at 1018 Tim VK2ZTM was 5x4 whilst portable in the same town with 3 watts and a whip aerial on a fence post. This was tropospheric refraction on a coastal duct.

21/12: 0840 the ZL beacon ZL1VHF and ZL2VHT were up to S2 in Sydney. I told Bill VK4LC who was 5x1 here at 1000 and heard him calling CQ ZL at 1032 when my beam was just north of east and Bill's was presumably on ZL! The beacons were S2 at his place. No ZL contacts were made on SSB but there may have been a repeater contact made from the south coast to ZL. 22/12: 0927 VK2XU 5x5 from Port Macquarie.

23/12: From 0818 worked VK5AMK, VK5ZK, VK5RO, VK5ZTS, VK5ZDR with signals from S5 to S9. Many contacts were made between Sydney and Adelaide stations during this Es opening. 0836 Barry VK2KAY at Gunnedah heard VK5MC. At 2035 (next morning) Steve VK4ZSH was 5x2, he is 20 km south of Brisbane. Later Tom VK2DDG at Byron Bay was 5x9 and at 2048 Tom was 5x5 here on 70 cm. Bill VK4LC came up at 2056 at 5x5 on 2 m. Also heard VK4KJL briefly and other VK4 stations heard me. Several Sydney stations had contacts with Steve, Bill and Tom on 2 m and with Tom on 70 cm. I heard Kerry VK2BXT, Jack VK2AAS and Ross VK2ZRU. At 2130 Doug VK3UM was 5x2. At 2046 Glen VK2YVU portable at Dorrigo was 5x2.

25/12: 0323 VK5AYD was heard here while he was calling VK6ZPG! Another Es opening to VK5 with a number of stations in both cities making contact I worked VK5AYD, VK5ZRC and VK5ZLJ.

27/12: As if all this was not enough, at 0219 ZL3ADT was 5x9 here. It is believed this is the first Es opening to ZL3 since 12/1/65 when it followed a similar opening on 26/12/64. Later I worked ZL3TIB 5x9, ZL3ADD 5x5, ZL3TIA 5x2 and ZL3RW 5x2. Several Sydney and central coast stations were in the pile up and many contacts were made. It appears the central coast stations may have been alerted to the opening by their FM repeater and decided to try a direct contact via SSB."

Thanks Gordon for a most interesting summary of what must have been a most enjoyable period for you. Reading through your notes it becomes apparent that most of the tropo contacts are being made in the early mornings which is consistent with what often occurs here in VK5 and Albany in VK6, although we do have evening contacts as well.

AND MORE ON TWO METRES

Of course the 2 metre Es didn't end there, there were several bouts of contacts between VK4 and VK3, VK2 and VK5 etc, culminating in another very good Es opening on 13/1 between VK2 and VK4 to VK5. VK5LP was lucky enough to be home this time and worked VK2ZFS, VK2DDG, (twice), VK4AQB, VK4ZSH, VK4KHZ (5x5 using a quarter wave ground plane), VK4AQJ, VK4ZMF, VK4ZWH, VK4AJA, VK4HD, VK4ZWB and heard at least six others, but just not enough time to work them. Signals varied from 5x9 to 5x5. Talking with Tom VK2DDG at Byron Bay on 2 metres, he informed me he had worked several FK8 stations in Noumea on 9/1 on 2 metres. Subsequently I found out John VK2BHO worked ZL3TIC on 144.3 FM on 27/12, also Eddie VK1VP had worked ZL3AAT, ZL3ADD and ZL3TIA on 2 metres which were probably the first VK1 to ZL contacts on that band. Steve VK4ZSH worked Les VK3ZBJ on 1/1/84 at 0130, and so the story goes on. Probably there are an enormous number of other 2 metre contacts not listed here because the Es coverage was so wide on so many occasions. If there have been any very outstanding contacts then VK5LP would be glad to hear of them please.

What is rather pleasing about the whole affair is that it has been confirmed once again surely that as often written in these notes, as the sunspot cycles go down to their lowest point so the Es on 6 metres increases and eventually brings about good 2 metre Es openings. I am sure we have only had a taste of what is to come, the next three years at least will see a lot of 2 metre Es openings all over Australia (not necessarily at once but in portions at a time), and I am also certain the great deal of interest expressed in the working of OSCAR-10 has done much to improve the operating skills and interest of a lot of people who previously may only have been marginally interested in 2 metres SSB. All this plus the large amount of DX working during Cycle 21 to overseas countries has given VHF quite a lift, and we are now seeing some good antenna installations around the countryside. All this means that the renewed interest ensures there will be some operators around whenever openings occur, whether 6 or 2 metres, hence the other end of the circuit has someone to answer — result — more and more contacts are made.

The vigilant operator will receive his rewards in proportion to the time he spends on the bands, and who is at the other end keen enough to be doing likewise. I am mindful of the fact that David VK5KK/8 (probably VK8KK by the time you read this), is now living in Alice Springs and has 52, 144 and 432 MHz equipment with him. He is a very keen VHF operator and is certain to put VK8 on the map before he leaves there. He with Jeff VK8GF also in Alice Springs and on 2 metres, will most surely give a lot of 2 metre operators in other parts of VK their first contacts to that area sometime in the next three years!!

SIX METRES FROM VK2

To change the subject somewhat, a letter has arrived from Neville VK2QF, and which I propose using to set out the record for the 6 metre Es season as it covers most of the relevant contacts made.

"27/11/83: 0640 ZL1ADP, ZL1UBM and ZL2TDC all 5x9. 28/11: ZL2TPY at 0944; 29/11 ZL1 and ZL2 beacons weak at 0150. 30/11: 0750 VK4HT, VK7 1000-1100. 1.12: ZL2TPY 0914 5x2 plus ZL2VHM beacon. 2/12: VK6OX 0228 5x9, beacon VK6RTT also. 3/12: VK2BHO, VK2BXT, VK2BKL Sydney area on groundwave at 0400 (300 km), then FK8EB 5x3 at 0600, FK0AQ 5x2 on 50.190 — never very strong but always there during FK8 openings and a good indicator. 2100 VK5LA 5x2 and VK2BA 2140 5x1 on backscatter. 2250 VK4 Cairns, VK5KK/8 2330 5x1 using quarter wave on back of his TS600!

"4/12: VK5KK/8, VK8GF 0318 to 0450 5x9. 11/12: VK4VY, VK4MS, VK4HT from 0139, VK4DO at 0603. 16/12: ZL2QS, ZL2KT 0302, VK5ZBU 0315, Russian TV on 49.750 MHz 5x5 at 0300, VK4RO 5x9 at 2133, VK4 and VK7 5x9 most of morning. ZL3TIC and ZL3TIB 2350 5x9, VK1ZQS 2358 5x1 backscatter. 17/12: ZL2CD 0020, ZL1MQ 0101, then VK3 and VK7 to 0200. At 2347 VK5KK/8 5x2 using ½ wave dipole this time! 18/12: from 0002 mostly northern VK4, 0057 VK8GF 5x9, 0139 VK9WCY 5x2, first heard him at 0125 5x9; 0150 VK6, 0343 JH8MQZ 5x1, ZL1ADP, ZL1BWN 0630 5x1, VK5ZLE 0810 5x1, 0830 VK3 and VK7, VK1VP backscatter, VK2YVG Sydney 3x1.

"20/12: VK9NS 2230 5x9, VK1VP backscatter, VK3 and VK7 2243 5x9, 22/12: ZL2TPY 0155 5x1; 23/12: From 0030 VK3, 4, 5, 6, 7 mostly 5x9, 0155 ZL2CD, ZL2TPY then VK1ZQS at 0232, VK5KK/8 0246 5x9. VK3, 5, 7 remainder of day. 2200 ZL2, 3, VK5KK/8 and VK7, 5x9. 24/12: 0928 ZL2TJX, 2106 ZL4OY/C 519 CW then 4x1 SSB at 2109 and audible for over an hour. 25/12: 2208 A35GW. 2218 FK8EM 5x3, VK4 at 2130. 26/12: VK5KK/8 0542 and again at 0835 to 5x9, VK5LA 2146 5x1, VK7 2300 5x9. 27/12: VK2BA mobile in Sydney. Seems mobile operation on 6 metres is generally very good. VK9NS 0700 to 0830 to 5x3 on the mobile (now at the VK2QF shack). 30/12: 2230 VK4PU 559, VK2BHO, VK1ZQS backscatter at 2245 5x1; 31/12: ZL3TIB 0001 5x1, FK8EM 0039 5x2, FK8EB 0042 5x2, VK8GF and VK5KK/8 0130 5x5, FK0AQ 0140 319, FK8EB 0143 5x2, FK8EM 0214 5x2, VK8ZLX 0240 5x9, H44PT 0427 5x9, (Peter H44PT had 100 contacts between 0427 and 0804 so he was busy!), VK7ZAR and VK7ZPK 2349 to 5x9.

"1/1/84: VK8GB 2330 5x9, VK5ZRO and VK5VJ 2340. 5/1: VK4JH, VK4AFC, 0135. 7/1: 2113 FK8EB 419, 1002 ZL2CD 5x5. 8/1: ZL4TGT 0748 3x1, ZL3TIC, ZL3THQ 0953 to 5x8. 9/1: 0958 ZL2TJX, ZL2TPY 5x9, then ZL2AQR. 13/1: VK8KTM 0650 5x9 at Alice Springs, FK8EM 0659 5x3, FK8AX 0722 5x8, FK8EB 0704 5x1, ZL7OY 0762 5x1 (also heard on 15/1) FK8EB 0818 519, ZL2CD 0848 519, also VK5 and VK6."

Neville remarks that ZL contacts are being made even when the ZL TV is only around S5. He has heard most of the ZL beacons, also the FK8 beacon on 50.190. No sign of the ZK2 beacon supposed to be on 50.170. Missed out on working David VK0CK on 25/12, this being the biggest disappointment.

VK0CK QSL ARRANGEMENTS

Talking with David VK0CK on Macquarie Island via the 20 metre skeds, he has indicated that all his 6 metre contacts are to be processed through VK5LP, the Voice in the Hills, who will act as his QSL manager. John VK5MG is kindly providing the QSL cards through the Kenwood organisation. If you want a QSL from VK0CK please send details

of your contact with him to me, VK5LP, per the address at the top of these columns; all I ask you to do is to enclose a stamped self addressed envelope of standard size for the return of the card. Neither David or I are seeking any other payment so there is no need to send any money! I will have all the details of David's contacts on 6 metres noted from the 20 metre link, so all contacts can be verified as genuine.

50 MHz IN UNITED KINGDOM

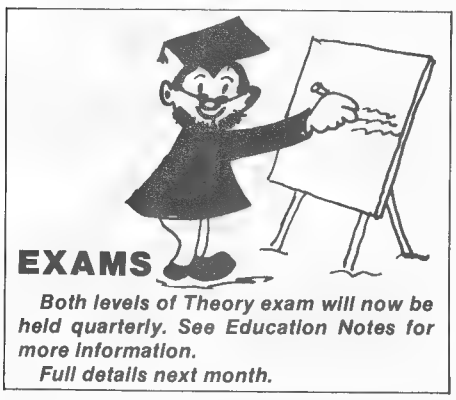
Contained in a letter from Norman G3FPK was a paragraph with a bit of hot news on 50 MHz. It reads: *"At present just forty UK amateurs have a permit for 50 to 52 MHz outside of TV hours. The Department of Trade and Industry has agreed to extend that to one hundred amateurs. Applications must be in by 31 March, after which the RSGB will make recommendations to the DTI who will then decide who are the lucky extra sixty. All 405-line TV in Band 1 will end by 31 December this year so we confidently expect to get the band for all in a year or so."* That must be hailed as good news for that part of the globe and we in VK wish our compatriots there good DX-ing!

HEARD ON THE BANDS

Mick VK5ZDR reports working more than fifty stations on 2 metres this season in VK2 and VK4 . . . 1/1/84 VK5KK/8 worked FK8EB and FK8EM . . . despite all the 2 m Es there are still contacts being made between Adelaide and Albany via tropo, with VK6WG, VK6KJ and VK6XY being noted. VK6KZ/P at Walpole 100 km west of Albany working into Adelaide too, also VK6DM at Denmark . . . VK5LP did finally work Noumea after always seeming to miss the several previous openings, and the contact on 14/1 to FK8EB at 0120 was a 5x9 contact both ways exclusively to us as there seemed to be no other stations around. Henry called CQ continuously either side of my contact until fading out eventually! . . . VK5LP also had an interesting contact with VK8ZLX, Peter, formerly VK6ZSP, who was 5x9 at 2220 on 13/1 running 10 watts to a dipole . . . ZL2TPY 5x9 at 0842 on 8/1, still 5x7 with 1 watt . . . VK2BXT worked FK8CR on 2 metres on 9/1 . . . seems to have been more VK8 activity on 6 metres this year, heard VK8ZLX, VK8GF, VK5KK/8, VK8KTM, VK8ZRL and VK8GB . . . 15/1 VK2QF worked ZL7OY . . . on 13/1 VK1-8, ZL1-4, FK0, 1, 8, H44, JA, P29, VK9NS available to someone.

On that bright note perhaps we should close with the thought for the month: "If you crossed a rubber band with an idea, would you get a stretch of the imagination?" 73. The Voice in the Hills.

AR



Both levels of Theory exam will now be held quarterly. See Education Notes for more information.

Full details next month.

EDUCATION NOTES

Brenda Edmonds, VK3KT
FEDERAL EDUCATION OFFICER
56 Baden Powell Drive, Frankston, Vic 3199

Information has just been received that beginning with the May 1984 examinations, DOC will conduct all levels of examination on a three monthly basis. Until now, of course, regulations and CW have been available at all examination dates, but this now means that both levels of Theory — Novice and AOCP — can be attempted on the third Tuesday of February, May, August and November. The current closing date for entries ie — the 8th of the month prior to the examination date — will still apply — so get those entries in in good time. A full statement from DOC will be published in the April AR.

We are very pleased to receive this information and are sure a number of entrants will find this extra service of great benefit.

Statistics for the November Novice exam were received recently. They compare favourably with those from previous November exams. A total of 293 candidates were successful out of the 567 who sat for the Theory exam — this works out at 51.7% with the State totals ranging from 61.1% (VK6) to 39.2% (VK4). For the other sections, results were as follows:

Section	Total pass rate	Range
Regulations	54 5%	50.0%-76.5%
CW sending 5 wpm	85.6%	69 2%-91.4%
CW receiving 5 wpm	60 6%	45 8%-100%
CW sending 10 wpm	66.7%	44.5%-83.9%
CW receiving 10 wpm	47.2%	27.5%-83.3%

Copies of the full set of figures can be obtained from me on request. I have not yet seen the papers but have had no complaints.

I would be pleased to hear from individuals or groups who are running classes this year. I have already heard from some.

Is there someone somewhere who is organising a class who also has access to video-recording facilities? I have had several comments that a set of lectures on video tape would be a very valuable aid to those who are unable to attend classes. Perhaps a club could make a project of this, and prepare a master tape which could be dubbed onto students' tapes in a similar way as we do the CW exam tapes. I would certainly be interested to hear from anyone with ideas of how this could be done.

If there is anyone whose requests were not fully answered during my illness, could you please write again and remind me. I hope to be fully back in action by the time you read this. Very many thanks to those of you whose good wishes have reached me.

73
Brenda, VK3KT

AR

COMMONWEALTH CONTEST

Fifty years ago, 1934, in the fourth British Empire Radio Union (BERU) Contest, as it was then known, all the action took place on 7 and 14 MHz only — ZL4BT won the Senior Contest from 150 entrants, and VK2XU was top VK in fourth place.

Thirty VKs appear in the results and a quick check through the call book reveals that of those calls, the following are still held by their original operators: Snow Campbell VK3MR, Ray Jones VK3RJ, Ray Carter VK2HC, Pete Bowman VK5FM, John Traill VK2XQ, Bob Cunningham VK3ML and Jack McMath VK3JJ.

VK2XU was listed as using "separate transmitters for the two bands with final tubes DET1 and UX210. Receiver a Schnell detector and 2 audio with 50 VHT and tapped Hertz antennas of 66 or 132 ft".

The Junior Contest (25 W max) was won by VS7GT from 106 entrants with VK5GR top VK in sixth place. Eighteen other VKs appear in the results and other originals still listed were: Jack de Cure VK3WL (now VK5KO), and Allan Fairhall VK2KB.

Eric Trebilcock was at it then as now, gaining second place in the Receiving Contest.

An outstanding performance was put up by Miss Madeline Mackenzie daughter of VK4GK. This young lady only eleven years of age finished ninth in the Junior (4th VK) with a score of 231 points. A certificate of merit is being awarded to her in recognition of her excellent effort.

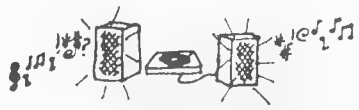
Quite a number of those mentioned have been regular entrants right up to the present time and it would be good to see them come up for a golden anniversary in the 47th Contest on the 10th and 11th of this month.

Contributed by John Tutton, VK3ZC.

AR

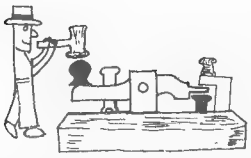
EMC

(Electro Magnetic Compatibility)



If radio frequency interference is causing you a problem you are reminded that — "Advice on all types and aspects of interference (PLI, TVI, AFI, etc.) is available from the National EMC Advisory Service".

FORWARD DETAILS TO
VK3QQ,
Federal EMC Co-ordinator, QTHR.



POUNDING BRASS

Marshall Emm, VK5FN
GPO Box 389, Adelaide, SA 5001

QRP OPERATION

As licensed amateurs we have a responsibility, both moral and legal, to use the minimum amount of power necessary in order to communicate effectively. Most of us are keen to improve our output — we want to put out the biggest and cleanest signal we can — because we know instinctively that the bigger we are, the more chance we have of scoring that rare DX contact or contest multiplier. Logic should tell us that a signal report of 5/9 or 5/9/9 simply cannot be improved on, especially if we throw out any consideration of "dB over nine" and use the legitimate definitions for strength reports. For that matter, if readability is 5, then it doesn't matter if the strength is 2, 5, or 60 over. Another way of putting it is that we are wasting power if we are using more than the minimum that is required to achieve a readability of 5 at the other end.

A growing number of us, particularly in the field of CW operation, have not only accepted the above logic but gone a step or two further and accepted the challenge of low-power operation as simply that — a challenge. Instead of trying to be the "big gun" they find as much or more virtue in seeing what can be done with the absolute minimum of power. It's called QRP or QRPp operation.

As is the case with most of the Q-codes, the meaning of QRP has become confused over the years. Generally speaking, it has come to mean "operating with low power," but there is some difficulty in defining low power. According to some authorities, QRP means operating with an output of 100 watts or less. I suspect that the entire amateur population of a certain otherwise well-respected North American country would swear that anything less than a kW or two is QRP! It would probably be easier to think in terms of the original meaning of the Q-code, and define QRP as operating with REDUCED power, that is something significantly less than the normal output from your station, whatever it might be.

In contrast, the term QRPp has a very definite, empirical meaning — operation with an output power equivalent to five watts DC or less. Within the ranks of QRPp enthusiasts are many who measure their output in MILLI-WATTS. This is the realm of your cordless telephones and radio-controlled toys, but amateurs are using milliwatt-output transmitters for DX, contests, certificate-hunting, and just about every other activity going. There is an organisation in the USA (of all places!) which offers the "Thousand Mile Per Watt" award, aimed at stimulating QRPp efforts. Contacts between the USA and Australia using one watt are not only possible but everyday occurrences for the dedicated QRPp'er.

The secret of successful QRPp operation is pretty obvious. You can build a QRPp transmitter from almost nothing, and when and where to transmit is easily learned from experience. But as with so much else in amateur radio, it all depends on the antenna. I once had a V-beam which produced gain on the order of 20dB — you shouldn't have much trouble in working out ERP in the favoured direction was something like ten times the legal input power! A couple of watts into that wire monstrosity was capable of some amazing results.

So you see a further benefit of QRPp is that it encourages construction of better antennae.

It also encourages people to listen to you. If you sign yourself as VK...../QRP you will find that DX stations will go to extraordinary lengths to get you into the log, even going so far as to protect you from QRM by asking QRO (full power) stations to please shut up.

With most modern transceivers you have very little control over the power output while running SSB, but you can generally adjust the CW carrier level right down to nothing (although it is usually a bit fiddly at the lower end). So you don't even have to have a QRPp transmitter as such, although you would probably enjoy building one. The circuit which accompanies this article is reproduced with permission from the VK CW QRPp Club journal "CQ VK". It is quite simple and all the required parts should be readily available at your local "enthusiast's" store.

The VK CW QRPp Club was founded in 1980 to encourage use of CW under low-power conditions (less than 5 watts) and thereby promote design and construction of home-brew equipment, antenna experimentation, and the study of radio propagation. The Club was a member of the World QRP Organisation which has members on six continents. Unfortunately, the Club was wound up in November, 1983, but efforts to get it going again may well have been successful by the time this appears in print.

Membership in the new organisation will be open to all amateurs, Clubs, and SWLs who are involved in or interested in CW QRPp operations.

If you would like more information about the Club, its activities, or QRPp in general, write to: Mr Len O'Donnell, VK5ZF, 33 Lucas Street, Richmond, SA 5033.

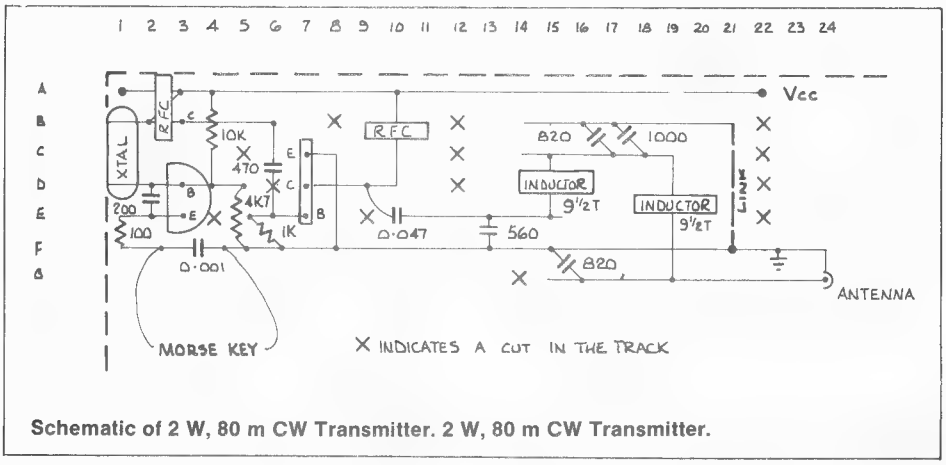
CW QRP calling frequencies are 3.530, 7.025, 14.050, 21.130, and 28.125 MHz.

CU next month.

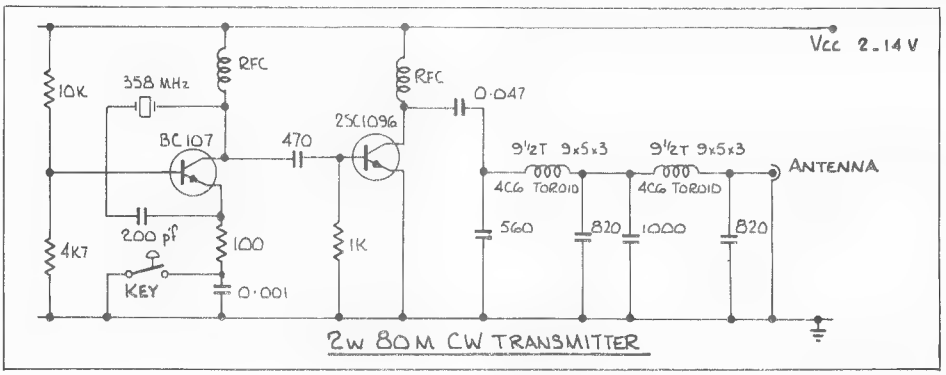
AR

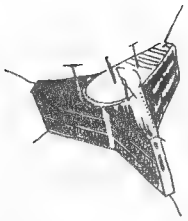
WANTED TECHNICAL ARTICLES

Write up your pet project or technical idea so others may share it through AR.



Schematic of 2 W, 80 m CW Transmitter. 2 W, 80 m CW Transmitter.





AMSAT AUSTRALIA

Colin Hurst VK5HI
8 Arndell Road, Salisbury Park, SA 5109

NATIONAL CO-ORDINATOR
Graham Ratcliff VK5AGR

INFORMATION NETS
AMSAT AUSTRALIA
Control: VK5AGR
Amateur Checkin: 0945 UTC Sunday
Bulletin Commences: 1000 UTC
Winter: 3.680 MHz
Summer: 7.064 MHz

AMSAT PACIFIC
Control: JA1ANG
1100 UTC Sunday
14.305 MHz

AMSAT SW PACIFIC
Control: W6CG
2200 UTC Saturday
28.878 MHZ

Participating stations and listeners are able to obtain basic orbital data including Keplerian elements from the AMSAT AUSTRALIA net. This information is also included in some WIA Divisional Broadcasts.

ACKNOWLEDGEMENTS
Contributions this month are from Darryl VK1DF, Bob VK3ZBB, Amateur Satellite Report (ASR), and the AMSAT-UK Oscar News.

UoSAT B

Constructional activity has continued at a feverish pace through the Christmas period to meet the demanding schedule that has been placed on this project. As you read this column the anticipated launch date may have already been announced. At the time of preparing this column a March launch was being un-officially suggested. In view of the heavy schedule the University of Surrey team have advised via the UoSAT-OSCAR-9 Bulletin that technical specifications and the relevant calibration for the telemetry etc will only become available after the satellite is shipped for launch. Only those amateurs who are capable of designing, building, debugging and shipping a new satellite in less than six months are entitled to complain at this lack of information. I myself shall patiently wait.

STS-9/SPACE SHUTTLE COLUMBIA/W5LFL

In the eyes of many amateurs the STS-9/W5LFL "Ham in Space" mission was a non-event. Perhaps it is now time to analyse and reflect on the happenings that did and did-not occur, on that mission. From the many sources of information that I have at my disposal I have selected the following extracts that I feel express varied views and interpretations of the mission, views that may or may-not concur with our own specific thoughts.

Firstly an extract from what may be considered to be an "official" viewpoint from AMSAT. Amateurs conversant with the Amateur Satellite scene in recent years may well sense the "Political" rationale behind the term Special QSO's quoted in this report. From ASR Number 68.

STS-9 WRAPUP:
"UNQUALIFIED SUCCESS!"

The historic first Amateur-In-Space mission of Owen Garriott came to a conclusion at Edwards AFB in California on Thursday, 8th December. Thus W5LFL became the first amateur radio operator to operate from a space vehicle in earth orbit.

The first QSO between W5LFL and an earth-bound amateur occurred on Wednesday, 30th November, when STS-9 was on the southeast-bound portion of orbit #40. WA1JXN of Frenchtown, Montana was first to nab W5LFL while W5LFL was well off the coast of Oregon. WA1JXN is a prominent EMEer with a large array of 2 metre beams and a full gallon in the shack on 2.

The first international contact came on Sunday, 4th December, when W5LFL QSOed with King Hussein, JY1. His Majesty was most cordial and seemed as pleased with the QSO as was W5LFL. W6AQ videotaped the QSO for the final version of the ARRL movie, "Final Frontiers".

Other special QSOs accomplished by W5LFL included Senator Barry Goldwater, K7UGA; the Space Center Amateur Radio Club (Houston), W5RRR; ARRL HQ, W1AW: the Motorola Radio Club, WB4LZR; the Enid (Oklahoma) Amateur Radio Club, W5HTK. In a telephone interview with ASR, Owen remarked that he even talked with his mom in Enid, his home town, through the facilities of W5HTK. Owen also chatted with his sons via W5RRR. A special patch from VK1ORR to Houston while W5LFL was in contact with VK1ORR in Canberra provided a vivid demonstration of the superb capabilities available to amateurs. In his telephone interview with WA2LQQ, Owen remarked that the patch through VK1ORR to Houston equalled or exceeded the quality of the S-band and K-band channels available to him as part of NASA's regular communications channels.

Owen went on to assert they had "Accomplished everything they had set out to do." Speaking earlier with ARRL's KB1N, he remarked that, "Thorough planning before the flight was absolutely essential."

W5LFL tape recorded all of the QSOs as a log. Owen has reviewed the tapes and has identified about 300 callsigns. He believes there may be another 10 or 15% to be culled by someone with "contest ears". During the flight he was bothered by background noise in the Shuttle.

The mission is being viewed quite positively by NASA's senior managers as well. Many of the fencesitters and nay-sayers are reportedly impressed enough with the present effort to nod affirmatively towards the next opportunity. That could come next year with the flight of Dr Tony England, W0ORE.

The radio on board worked quite well and the batteries stocked lasted for the slightly more than 4 hours on-the-air-time expended. The antenna worked remarkably well according to Garriott. Even when the spacecraft was oriented so that the antenna pointed skyward, ground stations could be copied. Apparently the entire spacecraft acted as an antenna since the F/B ratio of the DDR ring is about 10 dB. The antenna was designed by NASA's W5AVI of the Johnson Space Center.

A major puzzle remains to be answered. Why were no Japanese stations worked?

And so W5LFL goes into the history books. And we have seen one of the all-time high-water marks for amateur radio.

With reference to the Canberra Station VK1ORR I have received the following short report from Darryl VK1DF. Darryl quotes.

On Monday, 5th December, 1983, at 1010 UTC an experiment was carried out between Dr Owen Garriot, W5LFL, in the Space Shuttle Columbia and a group of radio amateurs in Canberra to see if emergency voice communication could be relayed between Columbia and ground controllers in Houston using amateur radio.

Dr Garriot proposed to the NASA representative in Australia, Dr Joseph Kerwin, that the experiment be carried out using a group of radio amateurs from the Orroral Valley Tracking Station. Because officials in the Department of Science were concerned about the possibility of RFI from amateur equipment during Shuttle operations at Orroral Valley a special station was established at the Deakin Telephone Exchange where the NASA Switching Centre is located. While it would have been more convenient to have operated from the existing amateur station at Orroral Valley the site at Deakin had the advantage of a much better horizon.

A group of amateurs under the supervision of Dick, VK1ZAH, constructed the station for which a special event call sign, VK1ORR, was granted. To ensure the success of the experiment three chains of equipment were set up and operated in parallel. For the prime system the following equipment was used:

144-10HV array phased for selectable LCP/RCP polarisation with AZ/EL mount;

Mast Mounted Lunar PAG-144 GaAs FET preamp;

Microwave Modules 100W Power Amplifier;
ICOM 260A transceiver

A separate facility was used for phone patching Columbia through to Houston. A FDK 750-A transceiver interfaced for phone patch operation was fed via a separate 100 W power amplifier to a two element beam orientated towards the predicted point of closest approach. Provision was made to switch this transceiver to the steerable crossed yagi system if weak signals were encountered. A third system consisting of a 5/8 vertical and an ICOM transceiver was available if required. All three systems used low loss hardline coaxial transmission lines.

The frequencies designated by Dr Garriot for the experiment were kept secure by Dr Kerwin until just prior to the scheduled contact. At 1108 UTC W5LFL was heard calling from Columbia. Initial subhorizon signals were received at S5 with rapid flutter but quickly rose to over S9. A maximum signal level of 20 dB over S9 (- 95 dBm) was recorded at the point of closest approach. During the contact Dr Garriot was able to speak briefly with his former "Skylab" collegue Dr Kerwin before being patched through to Houston. The phone patch between Columbia and Houston was entirely successful with signals reported as loud and clear. Dr Garriot mentioned that VK1ORR was the best station that he had heard since he had been in orbit.

It is unfortunate that the special six minute contact precluded contact with other Australian stations. However, the success of the experiment proposed by Dr Garriot will certainly strengthen the case for more "Amateurs in Space".

Darryl expressed the view that it was indeed unfortunate that Australian amateurs were precluded from contact with Owen W5LFL due to this experiment. Perhaps so, but at the risk of alienating some of my regular readers I personally take the pragmatic view that that particular experiment may have well ensured that amateur radio becomes a mandatory requirement for all future shuttle flights, as an emergency backup channel. Consequently any sacrifices made by VK amateurs to ensure the success of that experiment may well have been THE justification keycard for the future. I would like to think so.

Nonetheless, should there be future missions, an improvement in "on-air" behaviour will be necessary. Ponder for one moment on the following extract, once again from ASR. Unfortunately I cannot supply an interpreted meaning to the slanging quoted. Perhaps an ex W may be able to assist.

I quote from ASR No 67.

Signals recieved from Dr Garriot's HT were excellent copy on the ground as most reported full quieting signals whenever W5LFL was heard. Confusion was evident on the ground, however, as ill-informed ultra-lids repeatedly called on the downlink frequency, 145.55. The lids and n'er-do-wells were immediately pounced upon by a score of would-be spectral policemen each of whom, in turn, was accosted by a covey of airborne philosophers discounting the value of berating or disciplining the original intruder. By our reckoning, the leverage exerted by a single lid had never been higher. A single syllable uttered out of turn on 145.55 catalyzed a torrent of discipline and philosophy which grew exponentially. Only minutes later would tranquility be restored. Then, it would seem, someone would sigh a sigh of relief into a hair-trigger VOX . . . and inadvertantly launch another amateur radio chain reaction detonation. Ah, the sociologists!

More troubling, it seems, than the ultra-lids, were the super-hogs and nihilists, mostly in California, who largely succeeded in converting the tremendous leverage afforded them into total mahem. Here one found the perfect amateur radio soup. Take 50,000 radios. Spread them among 40,000 competent operators, 8,000 beginners, 150 incompetents, 300 Neanderthals and 200 anarchist/nihilist types. Mix slowly for several days under a strong on-shore breeze and what've you got? Los Angeles, naturlick!

East Coast Garriot-watchers did not go unscathed or unabused. New York probably makes up for the number of free spirits found in the LA environs with a higher per capita lid rate than most places. Chaos was the rule in NY as well with threats, counter-threats and visions of black-hatted hoodlums taking to the highways to mete out some vengeance contracted for by Cosa Nostra types.

Regrettably some Australian amateurs were no better.

The final comment on the behavioural problems I will leave to Ron G3AAJ the erstwhile Secretary of AMSAT-UK. From Oscar News Number 45 Ron's editorial in part reads, and I quote.

As I write this editorial for the events of the past two months of happenings to do with your Organisation. I am saddened to hear the last of the dying screams of the lesser idiots of the two metre band. I refer of course to that breed of person who take delight in spoiling the hobby for the rest of amateur radio wishing to have a couple of seconds of fun on the Space Shuttle mission. It cannot be a great thing to ask, for a normally intelligent human being, who perhaps in his every day life, holding down a decent job of work for the community, to desist from using foul language, ungentlemanly behaviour, and actions against the UK Amateur Licence. I cannot think that those people who are so willing to foul up other amateurs pleasure, use the same attitude within their own family environment. If then they do not in their everyday life, why do they do so on the air in front of Joe Public. If they do take that kind of action in their own family then we should welcome a police state as far as our hobby is concerned.

Summarising the W5LFL Mission from all the documentation published to date I firmly believe it was an unqualified success. An associate once commented to me at a WIA Federal Convention whilst preparatory work was being done for WARC-79 that because amateur radio was an international hobby administered through an International Organisation (the ITU) and that ITU decisions were eventually interpreted by Governmental Bodies (DOC) there would, at times, be events transpire that do not readily equate, to the accepted norm. The STS-9/W5LFL Mission is one case in question. Appreciating the enviable priviledges that The Amateur Satellite Service possess in regard to spectrum allocaton and freedom of operation, I believe that W5LFL and his mission planners planned and acted to ensure that whilst worldwide publicity was centred on the first "Amateur in Space" that no opportunity was afforded the media to denigrate amateur radio.

OVERSEAS SATTELLITE ORGANISATIONS

Around this time of year there is an upsurge in enquiries in respect to membership requirements of overseas groups. Hence I have compiled the following listing for the benefit of those wishing to know where and how to join. If you are aware of any others that are not listed I would appreciate any details for an update in a future column.

AMSAT MEMBERSHIP

Those persons wishing to join AMSAT, The Radio Amateur Satellite Corporation based in Washington USA (the parent body of the Amateur Satellite service) are requested to direct their enquiries to: *AMSAT, PO Box 27, Washington DC 20044.*

Various categories of membership are available as well as services. These items will be detailed upon receipt of your enquiry. All enquiries are promptly answered.

AMATEUR SATELLITE REPORT

This is a bi-weekly newsletter published on behalf of AMSAT. It is mailed first class to all subscribers (AIR MAIL to Overseas). ASR is the update of all satellite activities and events worldwide. Current subscription rate is $US30 for overseas subscribers. Direct all enquiries to: *Satellite Report, 221 Long Swamp Road, Wolcott, CT 06716, USA.*

AMSAT-UK MEMBERSHIP

The English affiliate of AMSAT, AMSAT-UK wishes to advise all intending new members that the correct procedure to join AMSAT-UK is to first write to: *Ron Broadbent G3AAJ, Hon Secretary AMSAT-UK, 94 Herongate Road, Wanstead Park, London E12 5EQ.*

Ron or Beryl his XYL answer all enquiries on the day of receipt, which is a service at which they can be justly proud. You will receive, as a result of your enquiry, a membership application form, services available and the current membership donation payable.

Unfortunately according to Ron there are many obsolete forms in existence so to avoid any inconvenience to all concerned please adopt the above procedure.

SOFTWARE BOOKLET BY N5AHD IS OFFERED

AMSAT Headquarters announces the availability of a booklet by Bob Diersing, N5AHD, of the AMSAT Software Exchange. Entitled "Using Microcomputer Programmes for Radio Amateur Satellite Orbital Prediction", the approximately 40-page booklet is designed" primarily for Radio Shack, IBM PC and CP/M-Based S-100 Bus Microcomputers." It contains chapters on Keplerian elements, AO-10 orbit loading, updating and running your programmes. It also contains complete programme listings for many of the pupular micros.

The booklet is available from AMSAT Software Exchange through AMSAT Headquarters, PO Box 27, Washington, DC 20044. The price is $8.50 for AMSAT members or $5.00 when purchasing software. For non-members the price is $10 alone or $5.00 when purchasing software.

. . . . . from ASR No 67

DAVIDOFF BOOK READIED FOR JANUARY DELIVERY

ARRL is planning to begin shipping its newest major publication, "Satellite Experimenter's Handbook" by Martin Davidoff, K2UBC, in mid-January *ASR* has leaned. The long-awaited work represents several years of effort by K2UBC, a long-time AMSAT supporter and former Director of AMSAT. Marty teaches mathematics at Catonsville College near Baltimore, Maryland.

SATELLITE UPS AND DOWNS

NUMBER	NAME	NATION	DATE OF LAUNCH	INITIAL DATA				FACILITIES
				PERIOD MINS	APOGEE KM	PERIGEE KM	INCLN DEG	
1983-111A	COSMOS 1508	USSR	11th Nov	108.8	1964	400	83	SI TM
1983-112A	COSMOS 1509	USSR	17th Nov	89.3	309	209	72.9	SI TM
1983-113A	x x x		18th Nov					
1983-114A	MOLNIYA 1	USSR	23rd Nov	702	39150	465	62.8	TV RC
1983-115A	COSMOS 1510	USSR	24th Nov	116.1	1537	1497	73.6	SI TM
1983-116A	STS.9	USA	28th Nov	89.5	254	242	57	With Spacelab 1 and amateur Owen Garriot

KEY: SI — Scientific Instruments
TM — Telemetry
TV — Television
RC — Radio Communication

During the period the following satellites were recovered or decayed:

1970-109A	*METEOR 1*	*18th Nov*
1974-023A	*MOLNIYA 1*	*17th Nov*
1976-062A	*COSMOS 837*	*18th Nov*
1983-062A	*SOYUZ T9*	*23rd Nov*
1983-106A	*PROGRESS 18*	*16th Nov*
1983-107A	*COSMOS 1505*	*4th Nov*

Together with eighteen other objects.

As at 13 Oct 83 the position of ATS1 (1966-100A) was 165.450° E 4.46° S

OSCAR-10 APOGEES MARCH 1984

DATE	DAY #	ORBIT #	APOGEE UTC HHMM:SS	SATELLITE CO-ORDINATES LAT DEG	LONG DEG	BEAM HEADINGS SYDNEY AZ DEG	SYDNEY EL DEG	ADELAIDE AZ DEG	ADELAIDE EL DEG	PERTH AZ DEG	PERTH EL DEG
1	61	538	0240:23	24	279			309	1	325	17
2	62	540	0159:26	24	269	306	-0	315	7	334	21
3	63	542	0118:29	24	260	313	6	323	12	343	24
4	64	544	0037:32	24	251	320	11	331	17	353	26
	64	546	2356:36	24	241	328	16	339	20	3	26
5	65	548	2315:38	24	232	336	20	349	22	13	25
6	66	550	2234:41	24	222	346	22	359	23	23	22
7	67	552	2153.44	24	213	355	24	9	22	32	18
8	68	554	2112:47	24	204	6	24	18	20	40	13
9	69	556	2031:50	24	194	15	22	27	17	47	7
10	70	558	1950:52	24	185	25	19	36	13	53	1
11	71	560	1909:56	25	175	33	15	43	8		
12	72	562	1828:58	25	166	41	10	50	2		
13	73	564	1748:01	25	157	48	5				
14	74	566	1707:05	25	147	54	-1				
15	75										
16	76										
17	77	571	0324:42	25	304					307	1
18	78	573	0243.44	25	294					314	7
19	79	575	0202:48	25	285					320	13
20	80	577	0121:50	25	276			311	3	328	17
21	81	579	0040:53	25	266	309	1	318	8	337	21
	81	581	2359:57	25	257	316	7	326	13	346	24
22	82	583	2318:59	25	247	323	12	334	17	356	25
23	83	585	2238:03	25	238	331	17	343	20	7	25
24	84	587	2157:05	25	229	340	20	352	22	17	23
25	85	589	2116:08	25	219	349	22	2	22	26	20
26	86	591	2035:11	25	210	359	23	12	21	34	16
27	87	593	1954:14	25	200	9	22	21	19	42	11
28	88	595	1913:17	25	191	18	20	30	15	48	5
29	89	597	1832:20	25	182	27	17	38	11	54	-1
30	90	599	1751:23	25	172	35	13	45	5		
31	91	601	1710:26	25	163	43	8	51	-0		

The book is designed to teach an intelligent beginner a great deal about orbits, satellites and the like. It is partially based on Dr Davidoff's prior work in the area, "Using Satellites in the Classroom." This work was privately printed in limited editions but was well-received by science educators interested in bringing space-age science to the high school and undergraduate college curriculum.

The format of the new book is similar to the ARRL Radio Amateur Handbook. Besides Amateur Radio satellites, the book also addresses weather and TV broadcast satellites.

AMSAT will be a primary distributor for this new book and will realise a handsome commission on each volume sold. Naturally all AMSAT members are strongly encouraged to obtain their copy from AMSAT. The price is $10 US, $11 Canada and elsewhere.

..... from ASR No 67

UP AND DOWNS FOR NOVEMBER 1983

Once again thanks to Bob VK3ZBB we have the latest listing of launches and re-entries.

SATELLITE PREDICTIONS

To all those amateurs who have passed on their comments in respect to the suitability of the OSCAR-10 Apogee data, I thank you all for your valued comment. Remember the constraints placed on its use as detailed in the December 1983 Issue. *de Colin VK5HI*

AR

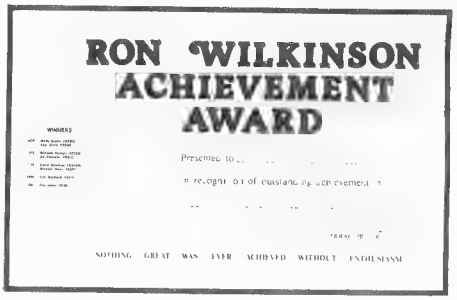
NO MOBILE OPERATION

Mobile operation on 2 m is not allowed in Oman, although for certain special events operation is allowed on specific days and at specific times.

From Royal Omani ARS Newsletter No 9

AR

RON WILKINSON ACHIEVEMENT AWARD



There were three nominations for the award this year. A proposal was received from each of VK1, VK2 and VK3 divisions. The Federal Executive was faced with a difficult task as all nominations were of a high standard. It was eventually decided that it would be necessary to make a joint award this year. The winners are:

Mr Peter Smith *VK1DS*
Mr Ken Palliser *VK3GJ*

Both gentlemen have expended much of their own time in the design and building of VHF repeaters.

Peter Smith designed, built and installed the VK1 2-metre repeaters at Mount Ginini and Black Hill which, because of their high quality, have been used as models by other repeater groups.

Ken Palliser's work in the design and construction of the "state of the art" Melbourne 2-metre RTTY repeater is a fine example of dedication to amateur radio.

The recipients of the Award will each receive a certificate and one year's membership subscription to the WIA. The $50 Magpub allowance will be shared.

This Award was set up in March 1978 funded mainly from interest derived from the investment of $1100 donated by Mrs Mary Wilkinson, widow of the late Ron Wilkinson VK3AKC, in his memory. The qualifications for the Award are as follows:

The Award is for special achievement in any facet of amateur radio. The following examples illustrate the level of achievement which will be taken into consideration in making the Award:

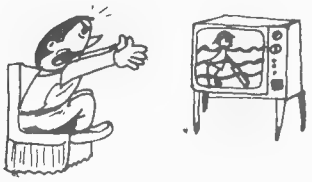
Outstanding communication achievement.
Article for Amateur Radio Magazine.
Holder of Australian DXCC.
Development of state of the art techniques.
Involvement in Institute affairs.
Microwave activity.
Involvement in WICEN, Education Clubs or similar.
Achievement in using amateur satellites.
Notable Public Service.

These are only examples. As can be seen the Award is extended to cover the whole gamut of amateur radio activities.

AR

This month we have an article written by Hans Ruckert, VK2AOU explaining EMC control which he witnessed first hand whilst in Europe recently.

NATIONAL EMC ADVISORY SERVICE



WEST GERMANY DEALS WITH EMI

by Hans Ruckert, VK2AOU

Tony Tregale, VK3QQ
NATIONAL EMC ADVISORY SERVICE
38 Wattle Drive, Watsonia, Vic 3087

"Our TV receivers are well protected against unwanted signals" — says one of Europe's top equipment manufacturers. This statement refers especially to the German market where the EMC standards are very high. Not the same can be said by Australian manufacturers or, for equipment supplied to the Australian market. Let's hope the Australian Department of Communications will use the power contained in the new Radiocommunications Act to stop "sub-standard" domestic entertainment equipment and consumer products being dumped on unsuspecting Australian consumers.

A recent visit to several European countries, especially West Germany, gave me a first-hand opportunity to discuss EMC problems with many European amateurs. Many of those I met were involved with EMC in a professional capacity, being members of the committees who formulated the DIN and VDE regulations and standards associated with government EMC legislation.

Despite the complexity of the EMC legislation existing, or about to exist in many European countries, I found no amateur who was at all concerned that these laws would in any way restrict his "legal" amateur activities. Indeed, I heard nothing but praise for these EMC laws — most amateurs thought the laws should have been brought in years before.

One of the main benefits to come from EMC legislation is education and enlightenment of the public to this previously unconsidered parameter in the purchase and operation of domestic entertainment equipment. Domestic radio, television and electronic equipment must have included with the operating instructions a letter from the spectrum control authority (DOC) advising the intending purchaser to check the type-approval numbers. The instruction goes on to explain how the numbers indicate the susceptibility grading against UNWANTED LEGAL SIGNALS of other services. If at any time the DOC find, in response to a complaint of interference to domestic entertainment equipment and consumer products, that the domestic equipment is at fault then the manufacturer or importer of the said equipment is directed, under the law, to attend to the problem.

EMC signal levels and frequency relationships are laid-down for all domestic entertainment equipment and consumer products by law, and in West Germany the law is retrospective. When investigating EMC problems only the TECHNICAL FACTS are considered by the authorities: Legal, financial, political, personal or commercial interests are given no consideration by the DOC. The main susceptibility tests given to domestic entertainment equipment and consumer products is covered in West Germany by G1239A, DIN45-305 part 302. The equipment is placed in a TEM (Transverse ElectroMagnetic) Cell, or a "Stripline" test unit, and subjected to an electromagnetic (RF) field of 3 V/m (3 volts per metre*) over a frequency range of 0-150 MHz (or as directed by the Susceptibility Standard), while at the same time receiving the intended signal at a level indicated by the (legal) Susceptibility Standard. The equipment under test must show no signs of disturbance to the reception of the intended signal/s.

During my visit to the Grundig Secam-TV plant at Creuzwald in France, I was shown around by DL6NH who explained how the TEM Cell was used to select, amongst other things, the best earthing points on the TV ground-frame ("chassis") which would provide the best rejection of unwanted signals. The TEM Cell not only provided the company with an efficient method of ensuring their equipment was produced with a good immunity factor (received only those signals for which the equipment was intended, and sold), but also assisted in keeping the number of extra components to a minimum, and therefore any extra cost to a minimum.

The West German Post Office (DOC) is well equipped, both legally and technically, to deal with EMC problems as they arise. EMI investigation teams are provided with mobile laboratories which are well equipped for conducting complex on-site EMC testing and evaluation, including field strength measurements. All the test equipment contained in the mobile laboratories, and used in EMI investigations, is designed and tested to meet all DIN/VDE standards. The EMI investigating officers are able to demonstrate to the domestic equipment owner how and why he has a problem. If the problem is found to be that of poor immunity of the domestic equipment the owner is given a written report stating the details of the case, the tests carried out and, recommended action to correct the defect. A copy of the report is sent to the equipment manufacturer or importer with instructions to attend to the problem.

One particularly good example of the system in action was illustrated when a government transmitter at Waldenbuch commenced operation and instantly became victim of public interference complaints. Some 2500 complaints were received regarding interference to VHF FM reception. With the aid of the mobile EMI investigation vehicles, officers of the DOC were able to prove beyond doubt, and to the satisfaction of all concerned, that the fault was not in the transmitter but again, "the old domestic equipment susceptibility problem" . . . Owners were instructed to have their receiving equipment fixed.

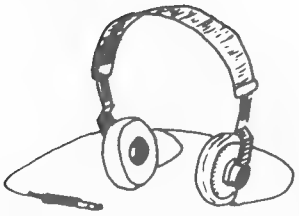
Many European manufacturers of domestic entertainment equipment and consumer products provide their European and US market products with facilities for the attachment of additional filters, which can be easily fitted, as necessary, to improve the EMC of the product well beyond the existing legal limits.

With the ever increasing use of complex electronic control and communications systems, which will take us into the 21st century, it is of paramount importance that swift and positive action be taken by all countries to control this growing EMI pollution problem.

The DIN/VDE standards are being submitted to the ITU for consideration by other countries because of the ever increasing EMC problems world-wide. Many other countries can benefit from the detailed work carried out by West Germany over the past twenty years.

** The definition of volts per metre (V/m) is complex and this parameter should be considered only in relation to the definition associated with the Standard in use . . . VK3QQ.*

AR



LISTENING AROUND

Joe Baker, VK2BJX
Box 2121, Mildura, Vic 3500

By the time you read this, doubtless you will already have had your Christmas pud, and a nice holiday, so may I wish you a happy new year. I'm writing this on 23rd November, so I've missed yet another deadline. So far there's been some wonderful feedback from the readers of this column, and its nice to know that my effort is worthwhile, especially when people, who recognise my call sign, come up on air to say "I think that you're the person that writes that column in AR". The fact that this is proof that I do have some readers encourages me to keep writing.

You will remember my columns about my early wartime experiences on the radio receiving station of the Sydney Daily Telegraph. This time I'm doing a follow-up by writing of my experiences during the war effort as a reluctant rookie soldier. From the beginning I wanted to get into communications for I felt that radio would be the coming thing after the war. During the war, repair men on civvy street were doing a vital job in keeping the domestic radios going, despite the shortage of parts, and they learned to improvise when a part was unavailable. However, I hadn't done any pre-war servicing, so was unskilled in that art.

Even so, I applied for a psychology test to determine my suitability for army signals work. The psychologist decided I was unsuitable for signals work, nevertheless I was sent from Sydney Showground (where we were in camp) to an army signals workshop at Leichhardt, where I was interviewed by an officer who pushed what I now believe to have been the circuit of a 108 packset under my nose, and asked me to identify several parts. I hadn't a clue what they were so he told me to return to my unit, and he would send for me later. *I never heard from him again.* I was young, was in A1 health and six foot two in height, and as the army wanted infantrymen, that was my station (*"the army knows what's best for you"* I was told). Eventually I found myself aboard a troop train with a couple of hundred other volunteers bound for the Infantry Training Battalion at Dubbo — all of 300 miles from hometown Sydney. The steam engine wearily chuffed into Dubbo station on one of the most miserable and wet days that I've ever experienced and when it stopped, an officer pulled us out onto the platform for a roll call — in the soaking rain.

It was raining cats and dogs, Dubbo was awash, the Macquarie river was in high flood and up into the backyards of the shops in Talbrigar Street (the main street).

After roll call we piled into a convoy of military lorries and were taken to a camp nearby, where I believe the Western Plains Zoo now stands. (In the intervening years I've often thought how appropriate it was to put a zoo in a place where once only savage sergeant-majors roared!)

I can remember an old wooden bridge across the Macquarie and the swiftly flowing river which was carrying all sorts of debris like branches of trees, bits of sheds and dead sheep. A solitary very business-like mititary policeman was manning that bridge and allowing only one military truck at a time over it, for they feared it might collapse.

At the camp, they taught us how to kill before the enemy could kill us. That was grim enough training but what specifically frightened me was the noise made by the Bren gun as I fired it, while running, from the hip. There must be a better way for me to help win the war, so one day when two of our old World War One Sergeants, asked for volunteers to become the nucleus of an infantry signals training unit, I couldn't volunteer quickly enough.

These sergeants had learned their own early training in signals in WWI, and between wars during the period known as "the Golden Years of Radio" *had been licensed radio amateurs*. By this time they knew a lot about radio.

There was a great shortage of military training gear at the time, and it is to the credit of these amateurs, that they were able to improvise for us in the way they did. For example, in teaching us the Morse code, they hooked together a buzzer output from a Don Five Telephone into the input stage of a small parade-ground (four valve) amplifier, to enable us all to hear the CW.

This pair were experts at making do with whatever gear was available and teaching signalling by lights (a most important thing for an infantry signaller) while in a classroom situation could have meant problems, but they found a way out.

They arranged for a resident military artist to paint a wide landscape consisting of trees, perhaps a church, a farmhouse, a bridge, and any other structure that an average landscape might have. Near each of these objects a small hole had been drilled through the landscape and behind each hole was series of six volt globes. Every student had a Morse key in the classroom, and every hole in the landscape was connected to a key. Thus it was we could, in the classroom, simulate a situation on a landscape where, perhaps a signaller near a bridge, might want to send a message to a fellow near the church, so he would do it by means of the light flashes from the globes behind the canvas. By this means we were taught the correct message handling procedures, before being taken to the lovely hills around Dubbo, where we had practical use of Lucas lamps or the heliograph.

We were also taught Morse signalling by flags (as distinct from semaphore, an art that I never mastered) and the practical use of the old World War One heliographs (whose history I believe goes back to the days of the American Civil War) of which our army of World War Two still seemed to have a plentiful supply. Thus it was that on "good" days, when the "seeing" was right, we could flash messages by helio between units at Dubbo and Wellington, a distance of perhaps forty miles, over flat country.

The army had a fine distinction between a signalman and a signaller — I've forgotten what the difference was, but it meant that a "sig" — no matter be he signaller or signalman, got a little more than a Private's pay of six shillings and sixpence a day. (I wound up getting nine shillings a day Specialist's pay).

Came the day when a mate and myself decided to get in some practice on the 108s (which we loved to use anyway — just like todays children with walkie-talkies). We signed on the line at the quartermaster's store, thereby accepting responsibility for care of the sets. The QM happened to be a Yorkshire-man, with a voice very much like that of the commandant of the camp, a Colonel Abrahams. We had good cause to remember the accent later.

We headed away from camp and out into the hills aforementioned. We established contact with one another, using the correct procedures, which included such army loved call-signs such as 'C-O-M-O calling B-O-L-O. Do you hear me? Report my signal strength." To which the reply would be "B-O-L-O to C-O-M-O. I hear you strength five" (or whatever) which must have puzzled any listening enemy immensely. Those call signs, and others just as silly, were heard so much on army circuits about that time, that I don't think the army knew any other. On this particular day after we had done a stint on communications for several hours, we decided to call it quits and head back for camp, after being several miles apart.

My mate had apparently switched his set off, but before I switched off I heard a voice calling me. Whether I was COMO or his mate BOLO, I can't remember at this stage, but the voice was calling me and in the prescribed army procedural manner, I called the voice back and asked it to identify itself (who knows, it may have been the enemy, but what self-respecting enemy would use a distinctive Yorkshire accent — but the suspicion never dawned on me). Then said the voice "Signalman Baker, this is Colonel Abrahams, *your commanding officer.* Do you hear me?" "ah . . . ah . . . hh . . . SIR" (said I with GREAT emphasis on the SIR bit) "I hear you SIR. What is the trouble?" with quavering lip and trembling in my rookie military boots. "No trouble," he said. "But I have been listening to you and your mate, and am very impressed with the way you have been using the equipment. Congratulations". Then he was gone before I could reply.

When I came within speaking distance of my mate as we returned to camp I told him of the incident. Of course he had heard nothing. The story soon did the rounds of the other trainee signallers but all they did was giggle and I didn't know what they were giggling about.

I found out a few days later. Remember the

QM sergeant with the Yorkshire accent? Well, after we had left the QM store, he had decided to have a little game with us — er, I mean me. So he issued himself with another 108 set and need I say more? And he had me in, hook, line, sinker, army boots and all.

Superior to our two sergeants, was a certain captain who in true army fashion, although he knew nothing (his own admission to us) about wireless, was in charge of the trainee wireless unit, which was us. Not to be abashed, he told us that although he didn't know a bee from a bulla foot about wireless, he had roped in somebody who did to teach us. The nominee was the Reverend Reg Dransfield, C of E Chaplain to the camp who was a real whizz at wireless. He had been yet another pre-war amateur. He often told us of how he had given lectures in the presence of such wireless "greats" as Mr (later Sir) Ernest Fisk. Padre Dransfield was, I believe, also associated with the establishment of commercial station 2DU Dubbo. Padre Dransfield, at the camp, built a transmitter which he told us he would use on the air after the war. I did indeed see him using it at Canberra after the war. Padre Dransfield was a most excellent choice for us as an instructor, and what the two World War One sergeants did not know about the latest techniques he was able to tell us.

As Sigs, we had to know all about how to read a military map, so that if you were handed such a map, with all its contour lines showing, you knew by looking at the map, even before seeing the terrain, if it was possible to send light signals by either Lucas lamp or helio, over the distance between point A and B. For this reason we had to know how to correctly interpret those all-important contour lines. There were military symbols for every object that one might find on an average landscape, such as a church or bridge. So also on the maps were what were called the "Trig Stations" and there were a number of Trig Stations in the hills around Dubbo.

One day a party of us were at a Trig Station, and our assignment was to set up light communications with another station some miles off. We spent several hours sending practice messages to and fro, and eventually decided to call it a day. But before we had dismantled our equipment we heard the sound of a light plane flying nearby and it was soon obvious that the plane was in trouble. It was a very small plane from an RAAF training camp some distance from Dubbo. We saw the tiny plane fly over a wheatfield and we could see that the pilot was looking for a place to land. We could do nothing at that stage but watch (in horror) as the trainee (as I found out he was later) touched down among the wheat. Then Eager Beavers, as we rookies were, to find any excuse for flashing something other than practice messages, we ran towards the plane as fast as we could go.

The trainee pilot had landed safely among the wheat, and we asked him what help he needed. He asked could we get a message back to his base, to tell them where he was, and that he needed some extra fuel. Overjoyed at the chance to send a meaningful message after all the practice we ran back to the Trig Station and flashed a message back to our camp asking them to phone the RAAF base re the trainee pilot.

After about an hour we spotted another plane obviously looking for the downed one, and within a few minutes plane Two had landed beside plane One. A high ranking RAAF officer climbed down and completely ignored us and our Sergeant Preston, had a few words with the young RAAF trainee, gave him some fuel and ordered him to take to the skies pronto. Then took off straight away, without so much as a thankyou.

As I wrote earlier, we were taught during training how to improvise with make-shift equipment. For example a party of Infantrymen men were sent to the nearby rifle range for some routine rifle practice. It was a large party of quite a few hundred men and they were to camp at the range for several days. They took all the necessaries with them, except an insufficient water supply, and no microphone for the 108 pack set that was to be used for communication back to base camp.

The loss of the mircophone was not discovered till a day or so later when the water ran out. So — what to do? I think it was a Sig Hart that was on duty at the rifle range that day, and he was a pretty cluey feller with some pre-war radio experience. He had a brainwave. He interconnected a Don Five field telephone with the 108 transceiver in such a way that he was able to use the buzzer output of the 108 to send a CW message back to our base. And it wasn't long before a watercart fully laden, plus a spare microphone arrived at the rifle range and all was well again. (I often wonder if the Broken Hill artist "Pro Hart" and he are one and the same person.)

Infantry sigs had to learn all about Don Five Telephones, which were one of the most rugged pieces of military communications gear ever built. It came complete with handset and two square 1.5 volt cells. It had no ringing handle so you raised the military exchange via the buzzer, but it could be called by magneto ringing from the military exchange. When we were out on field exercises, the exchange would be set up in a tent on some hillside and earth-return circuits would be run outwards radially by eager-beaver rookie sigs all over the nearby hills. The field telephone wire came on large rolls, the spools were of rugged metal construction, and the inner end of the roll was connected to the metal spool. When the rookie got out of sight over a hill paying out the wire from the spool, just for a gag the fellow on the switchboard would often push in a plug, throw a switch and give the ten line UC magneto some very vigorous turns. Thereupon he would hear a far away yell, as the rookie promptly dropped his spool of unpaidout cable.

All armies love playing war games and if you are in an infantry training battalion you have to play war games to get experience. At Dubbo, we played war games with the utmost realism, with two armies the goodies and the baddies or yourselves and the enemy. As the enemy was made up of Aussies just like us, they had to be very good actors to war with us in the way that they thought our enemy should perform. When these manoeuvres were on, we were often camped out for days several hundred of 'them' versus several hundred of 'us" — complete with rockets, dummy bullets, bayonets, and any other fearsome weapons to make it look like the real thing. As they had their spies — their intelligence gatherers — we had to keep our traps shut during these war games.

As sigs, we had to guard our communications equipment as if it was made of gold for the "enemy" might creep up on us during the night as they often did. When such a raid took place, if our guard was a bit tardy about his business, we might awake next morning to find our Lucas lamps, our Freddiephones, Don Five Telephones or Fullerphones gone and maybe our field telephone lines cut, or other general mayhem done. When this was done, the "prizes" were later delivered by the enemy to our CO to prove to him just how inefficient we were.

On one occasion however, before we settled down for the night, Sergeant Preston told us that his spies behind the enemy lines had told him that a "raid" could be expected that very night. Accordingly, we were bedded down with rifles and fixed bayonets at the ready, *and we were not asleep*. When the enemy crept up on us, we rose as a team with fixed bayonets and gave them such a hell of a fright that I think if you visited Dubbo now you would find them still running about somewhere.

And so it was that at the Dubbo Infantry Training camp, where the Western Plains Zoo now stands, I got my second chance to get into army signals — and had grasped that chance with both hands — a decision which I have never regretted. Throughout the remaining war years — with one or two brief exceptions, such as when I was on a Press Unit, and an Entertainment Unit, I stayed in Sigs in various capacities both technical and operational, in a variety of places including the Northern Territory and the Netherlands East Indies — but these are stories for another time.

Thanks for all your kind "on air" remarks about this column which come to me quite voluntarily when someone hears my callsign and recognises me as the writer of this column. Thank you also to those who have taken the trouble to write to me personally. Remember that the story I am now telling is only my own story — that each of you who served during those critical years has his own story which only you alone can tell. I am fortunate in being able to put my story before you in this way, and I thank you for reading it thus far, but could you tell us your story. I am sure it would make interesting reading, especially since only the official story is told by the war historians, so you are the only one who can tell yours, and if you don't posterity will never know about it.

Love to meet more of you on the air any night, so why not drop in on 80 near the wee midnight hours?

73 from Joe VK2BJX
AR

Our Magazine has a LARGE APPETITE.

Articles on amateur radio are always welcome.

AWARDS

Mike Bazely, VK6HD
FEDERAL CONTEST MANAGER
8 James Road, Kalamunda, WA 6076

Awards issued and DXCC amendments up to the 15th January, 1984 are listed below. It seems that the BY1PK and HK0TU QSL's have been turned around very quickly as these stations have been responsible for most of the changes in the top positions.

During the past couple of weeks I have received QSL's from stations wishing to update their scores. Unfortunately no return postage was included and of course I was faced with the problem of what to do with these cards. *Do I return them by surface or certified mail or not return them at all?* This problem is covered in our DXCC rules. *Could I suggest that you check the rules before forwarding updates?* If you have not got a copy of the updated rules and DXCC lists a large SASE (45 cent stamp) to me will get you copies by return mail

DXCC TOP LISTINGS

PHONE

Callsign	Tally	Callsign	Tally
VK6RU	314/362	VK30T	295/299
VK5MS	314/361	VK6FS	295/299
VK4KS	314/345	VK6YL	291/294
VK6MK	313/353	VK5WO	290/314
VK5AB	313/347	VK6IH	288/290
VK4VC	310/324	VK3RF	286/291
VK4RF	309/322	VK3YJ	285/286
VK6HD	309/320	VK7BC	283/288
VK7DK	308/327	VK2AHH	281/308
VK6LK	308/325	VK3DU	279/284
VK7LZ	307/327	VK3BLN	279/283
VK4AK	307/317	VK4BG	275/286
VK3JF	306/321	VK3DFD	275/282
VK5WV	302/317	VK6AJW	275/277
VK6NE	300/310	VK3ACD	271/286
VK3AKK	299/304	VK4DO	261/290
VK3AWY	296/300		

CW

VK2QL	310/353	VK6HD	277/292
VK3YL	306/339	VK7LZ	271/324
VK3XB	294/325	VK3KS	269/290
VK3YD	292/326	VK6RU	262/304
VK4RF	288/312	VK3RJ	261/290

OPEN

VK6RU	314/363	VK3XB	299/330
VK3YL	314/353	VK7BC	299/306
VK4KS	314/353	VK3AKK	299/304
VK6MK	313/353	VK3OT	298/302
VK4SD	313/349	VK6FS	296/300
VK6HD	312/330	VK2SG	292/314
WA3HUP	311/330	WB3CQN	291/294
VK4RF	310/340	VK2AHH	287/317
VK7DK	310/329	VK3BLN	283/287
VK7LZ	309/344	VK4BG	282/296
VK3JF	309/333	VK3ACD	271/287
VK4AK	309/320	VK4DO	270/299
VK5WV	303/318	VK3JI	266/293
VK5WO	300/329	VK5BO	256/290

DXCC NEW MEMBERS

PHONE

Callsign	Cert No	Tally
VK2AVZ	323	149/150

DXCC AMENDMENTS

PHONE

Callsign	Tally	Callsign	Tally
VK3RF	286/291	VK4VC	310/324
VK3YJ	285/286	VK5BO	202/203
VK3ACD	271/286	VK5WV	302/317
VK3AWY	296/300	VK6HD	309/320
VK4AK	307/317	VK6IH	288/290
VK4RF	309/322	VK6AJW	275/277

CW

VK3RJ	261/290	VK4RF	288/312
VK3YD	292/326	VK6HD	277/292
VK3YL	306/339	VK6RU	262/304

OPEN

VK3ACD	271/287	VK5BO	256/290
VK4AK	309/320	VK5WV	303/318
VK4RF	310/340	VK6HD	312/330

WAVKCA AWARD

Callsign	Cert No	Callsign	Cert No
JK1DVX	1194	JA1FUF	1200
JR6CWC	1195	JA7TJ	1201
JH1LME	1196	JA1GO	1202
JA2ZP	1197	OK2QX	1203
JH1BZJ	1198	JA0CGJ	1204
JA1GBI	1199	JJ3AFV	1205

HEARD WAVKCA AWARD

Callsign	Cert No	Name
L-50000	69	P Simmonds

HELVETIA — AWARD

Contacts made after 1st January, 1979 are valid. Mail your list and QSL's for the twenty six cantons to the award-manager: Kurt Bindschedler, HB9MX, Strahleggweg 28 CH-8400 Winterthur, Switzerland.

THE VK EXG RADIO CLUB SILVER ANNIVERSARY AWARD

The award is available to all amateur radio operators LOCAL and OVERSEAS. VK EXG RADIO CLUB MEMBERS may be contacted on any amateur band using any of the regular modes. Eg, SSB, FM, CW, RTTY, AM and ATV.

Contacts must be made between 00.01 UTC 1st January, 1984 and 23.59 UTC 31st December, 1984.

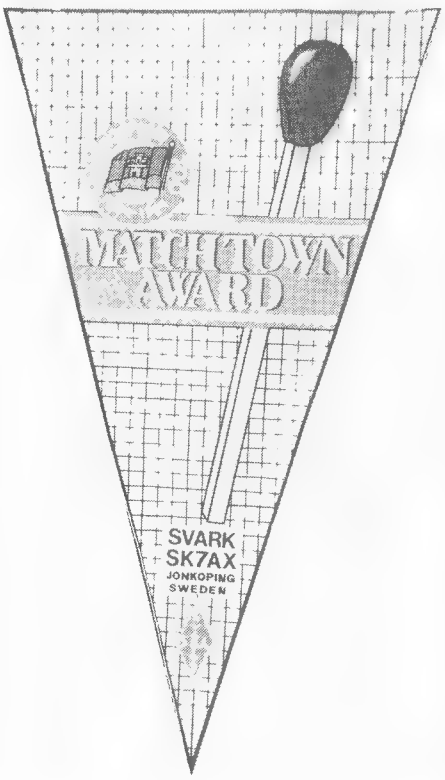
For all ExG Radio Club members club net contacts will count. VK club members will require contacts with twenty five VK members. For non members net contacts will not count. Australian amateurs will require contacts with twenty VK ExG Radio Club members.

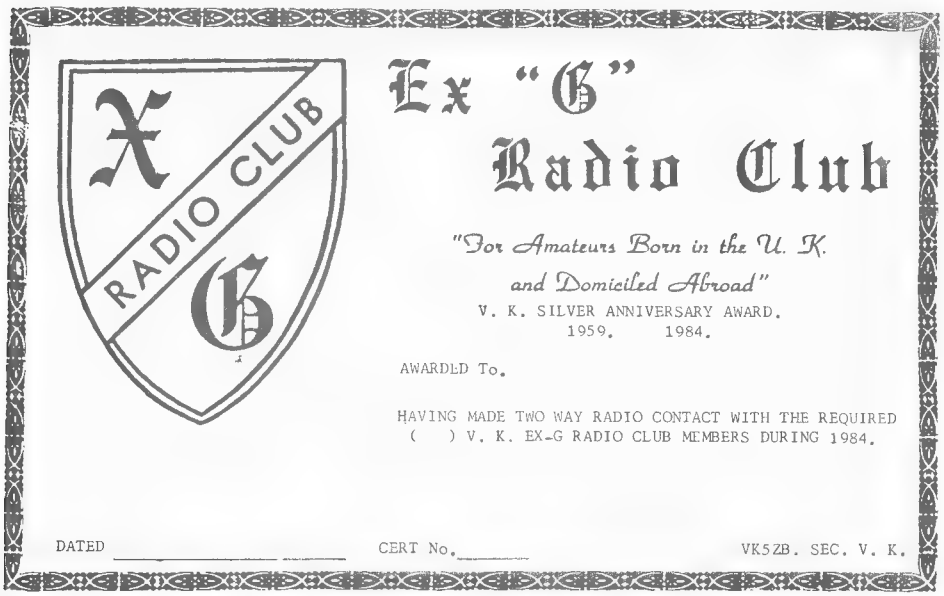
To count as a contact the VK members must be financial for 1984.

Information required for each contact . . . DATE, TIME UTC, STATION, NAME, BAND and MODE.

The cost of the award is $1.50. This will cover packing and postage.

Forward applications to: The ExG Radio Club, 1 Emily Ave, Clapham. South Australia 5062.





THE MATCH TOWN AWARD

In the year 1284 the town of Jonkoping, Sweden, was founded and this year it will be celebrating its 700th birthday.

To mark this occasion the local radio club station in Huskvarna, Sodra Vatterbygdens Amator Radio Klubb (SVARK), which covers both Jonkoping and Huskvarna, will be issuing an award, which consists of a four coloured diploma and a silk streamer, named "The Match Town Award", since the first match stick factory was built in Jonkoping.

To achieve this award it is necessary to work amateurs in Jonkoping county. Each contact is worth one point with an extra bonus point for working the club station SK7AX.

All legal contacts, crossmode, crossband etc between 1st January, 1984 to 31st December, 1984 are eligible for this award.

Send copy of log with $US5, 10 IRC or 30 SEK to Award Manager, SVARK, PO Box 561, 02 Huskvarna, Sweden.

Finally, information is sought on the "Australian Commonwealth Electorates" award. Paul Keller, K8EJN has been unable to obtain a reply from the person listed as the award manager. Anyone who has any information on this award could they please let me know or alternatively write direct to K8EJN, 1920 Lincoln Way NW, Massillon, Ohio 44646, USA.

Well that's the lot for this month, happy DX-ing, 73 de Mike VK6HD.

AR

MAGAZINE REVIEW

Roy Hartkopf, VK3AOH
34 Toolangi Road, Alphington, Vic 3078

(G) General. (C) Constructional. (P) Practical without detailed constructional information. (T) Theoretical. (N) Of particular interest to the Novice.

SHORT WAVE MAGAZINE. OCTOBER 1983. Simple CW transmitter. (N). (If modified for the local allocated bands.)

RADIO ELECTRONICS. OCTOBER 1983. Buyers' guide to computers. (G).

QST. OCTOBER 1983. UHF/VHF Wattmeter. (P). Understanding and measuring inductors. (N). 1983 ARRL DX Contest. (G).

CQ. NOVEMBER 1983. RTTY Special. Displays, interface, etc. (G).

73 MAGAZINE. JANUARY 1984. Pocket Radio. (G). CW Regenerator. (P). Computer circuit drafting. (Programme). Simple Q meter. (C).

HAM RADIO. NOVEMBER 1983. Special Receiver issue. (G). Time Domain Reflectometer. (T).

CQ-TV MAGAZINE No 124. NOVEMBER 1983. General information and circuits for ATV.

OSCAR NEWS No. 45. DECEMBER 1983. General Satellite news. Portable Twin Helix Aerial for 435 MHz. (C).

AR

INTRUDER WATCH

Bill Martin, VK2EBM
FEDERAL INTRUDER WATCH
CO-ORDINATOR
33 Somerville Road, Hornsby Heights, NSW 2077

After many enquiries, and much patience on behalf of many Intruder Watch Observers, the location of a troublesome intruder has come to light. I refer to the intruder 'SGJ', who plagues the amateur population on 7.060 MHz in the A1A (CW) mode. Information comes courtesy of the FCC that he is located in China (surprise) on the Chinese/Burmese border. The FCC have complained to China with regard to this intruder.

The IARU Region 111 Intruder Watch Co-ordinator, Bob, ZL1BAD, has written to the Far East Broadcasting Company, with regard to their spurii appearing on the fifteen metre band. They are located in Manila, in the Philippines.

Indonesian CBers continue to transgress on the 10 metre band, with the results being heard daily by the IW observers in Darwin. Having just compiled the IW Summary for the month of December, 1983, a few facts come to light, and, as promised in the December, 1983, IW column, I now present them as a matter of interest and concern to active amateur operators.

At the office of the Federal IW Co-ordinator, 605 pages of intruder reports were received for the year 1983. This consisted of 6,908 reports of intrusions into the amateur bands, and is ONLY CONCERNED WITH intruders using modes of Broadcasting (A3E); A1A (CW); and F1B (RTTY). Many other reports were supplied regarding intruders using other modes, eg: R7B, B9W, A2A, A3C, etc.

The breakdown is as follows:

Number of intruders heard using AM: 5,339
Number of intruders heard using CW: 583
Number of intruders heard using RTTY: 986.

Observations were received from a total of 94 IW observers, from ALL DIVISIONS of Australia. Well done to those who managed to get their reports in. Of these 6,908 intrusions, 585 gave call signs — not a very high percentage, but at least it gave the IW something to work on.

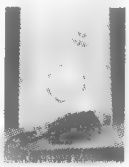
To finish off the column for this month, I would like to publicly acknowledge the help afforded the Intruder Watch by the following amateurs and short wave listeners:

THANKS TO:
VK1ABR, AW, CC, DC, DH, DL, FM, GD, GP, HF, IC, KAL, KV, MM, NEB, NEN, NET, UE, L10071.
VK2AAB, BQS, DAT, DEJ, DHH, DHK, DUO, DYP, EBM, EES, EKT, EPC, KEM, NQZ, PS, PY, QL, VYI, YA, C Casotti, N Burton, P Boskos, G H A Bradford.
VK3AMD, BMD, BPZ, BRG, DMP, JY, LC, NQA, PC, XB, XF.
VK4ABV, AFA, AFE, AFO, AGL, AKX, ANY, AOE, ATS, BG, BHJ, FB, KAL, KHZ, KTW, LT, NIE, NUN, OX, VDD, VDE, VDH, VFG, YX.
VK5AIB, GZ, MX, NOT, NJF, PN.
VK6AJ, CZ, FS, RZ.
VK7RH.
VK8BE, CO, HA, KGA, OB and P29NES.

See you next month.

AR

BOOK REVIEW



Alan Foxcroft, VK3AE
11 Virginia Court, Caulfield, Vic 3162

RSGB AMATEUR RADIO OPERATING MANUAL

Edited by R J Eckersley G4FTJ; Published by Radio Society of Great Britain.

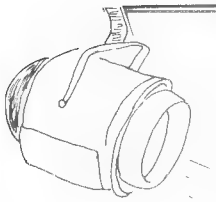
Here is a book you will want to keep alongside you on the station desk at all times. It contains something of interest for every operator: the novice, the old timer, the serious DX-er and the experimenter. It will encourage you to make a further study of aspects of amateur radio with which you may not be familiar, giving simple, yet detailed discriptions of satellite communications, AMTOR, RTTY — all approached from a practical operating aspect.

The manual's main appeal will be to the operating enthusiast. Like its sister publication, the ARRL-Operating Manual, it contains comprehensive listings of amateur international callsigns, ITU callsign allocation blocks and the CQ and ITU zone numbering systems. But the RSGB-version goes further and includes continental and regional maps of internal callsign groupings. This is of particular value in the case of the new system of USA callsigns and license classes which were introduced in 1978 and which have confused most of us on occasions.

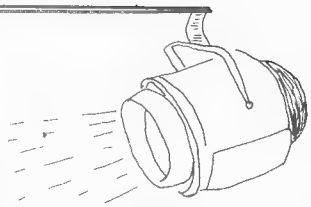
More than one third of the book is devoted to DX and contest working and even the most experienced contest operator will find information and hints of value on planning strategies and aids. The Editor and Publishers should be congratulated for bringing together such a wealth of experience and knowledge as is displayed by the contributors to this material. So, if you hear that station signing 4T4 and want to know where it is likely to be located, if you're not sure whether NH4AB is located in Florida or on Midway Island, if the callsign ZL0AA looks to be "phoney" but you're not sure, or if you really want to improve your operating procedures and techniques, then this is the operating manual for you.

The RSGB Operating Manual is available from your Divisional Bookshop or from Magpubs.

AR



SPOTLIGHT ON SWLing



Robin Harwood, VK7RH
5 Helen Street, Launceston, Tas 7250

I was very fortunate recently in being able to test Tandy's latest addition to their general coverage receivers. It is the DX-400 with keyboard entry, no doubt inspired by the Sony ICF-2001 model. It is portable, being smaller than Sony (155 mm by 320 mm by 73 mm) and weighs approx 2 kg. The phase locked loop receiver covers from 150 kHz up to 29.999 MHz as well as the standard FM broadcasting band (87.5 to 108 MHz). It runs off the 240 volt AC or internally it is powered by six "C" cell batteries as well as running off a 11-16 volt external DC source. The set utilises eleven IC's, three FET's, sixty two transistors and eighty eight diodes.

On the MF/HF ranges, the DX-400 uses three IF's making it a triple conversion superhet, and on FM, just a single IF making it a single conversion receiver at that range. The manufacturer claims a 70 dB image ratio on the MF/HF bands and 26 dB on FM. It also claims a 1 uV for 10 dBm signal/noise ratio on AM between 550 and 29999 kHz and 0.5 uV for SSB. Both the longwave and FM ranges are less sensitive being 5 uV.

As far as performance goes, I found it truly amazing. It is very simple to operate, one has to key in the frequency by pressing in numerical sequence. For example 1-5-0-7-0 followed by the Execute key and you can hear the BBC World Service even on its rod antenna. By tuning the Antenna Trimmer, you can peak the signal. With an SSB/CW signal, you press the appropriate key and are able to resolve the audio by the use of the Fine Tuning dial.

It is extremely stable with absolutely no sign of apparent drift, claimed to be less than 1 kHz after a sixty minute warm up. I can verify that as it proved to be far more stable than my Yaesu FRG 7. Also by tuning in to the centre frequency of an AM signal, is also a very good test of its stability.

Of course the model does have some drawbacks. One important failing I found is with the keypads. Unlike the ICF-2001, Tandy has adopted smaller rubber type pads and closely placed together. I personally experienced some frustration entering frequencies in to be scanned due to the keypads being too small and close. I think those with visual impairments would have problems.

When connected to an external antenna. the set tended to cross-modulate on weak stations from nearby stronger signals. This, however, can be overcome by having an aerial tuning unit in line. On MW signals, I also found that there were problems caused by a 5 kW station only two kilometres away from this QTH, making it difficult to hear weaker stations on the external antenna. A wavetrap tuned to the frequency of the offending station did reduce the problem. However, those in metropolitan areas with more high powered transmitters servicing these areas could resort to the use of the inbuilt antenna. A good earth connection I found also reduces splatter from nearby stations.

One band on which I was disappointed was the Longwave band. Besides splatter from that nearby 5 kW transmitter made it impossible to use an external antenna. The local airport weather service on 242 kHz was not all that strong even though I rotated the set for maximum signal level. However, on FM the audio response was very good and wide. Here in Launceston we only have one major FM station operational, servicing the entire Northern Tasmanian region with a power of 120 kW, so there were no other stations or signals to make a comparison.

My American correspondent recently forwarded some interesting information relating to the pirating by individuals of subscription and/or cable television programmes without paying revenue. The networks do estimate they lose about $US500 million annually to these pirates selling decoders to otherwise law abiding citizens for them to watch these services free. As a counter to this, the networks recently launched a campaign warning people that they face prosecution for pirating cable or subscribed programmes. They can face up to fourteen years in prison and be fined up to $US30,000. Already there have been successful prosecutions against several cable piracy rings.

As well, the networks are making it more difficult to unscramble video pulses to stop unauthorised personnel from tapping into the networks. One network, the Home Box Office with an estimated thirteen million subscribers throughout America, are clamping down on the estimated quarter of a million people within the US who circumvent revenue contributions by watching the satellite feeds to associated ground stations for free by encoding the video and audio outputs. I do notice that a similar procedure is likely to be adopted by AUSSAT satellite due to be launched in mid-1985. According to the January issue of the TV/FM section of the ARDXC News, transponders carrying commercial network programming will probably be decoded to protect the interests of Australian regional TV stations.

Therefore I would advise against buying those satellite dishes and down converters, frequently advertised in overseas publications. These could easily turn out to be white elephants if the trend to digitally encode signals continues. All the viewer will see perhaps could be a jumble of sync pulses and herringbone patterns unless he possesses the correct decoding devices. I am sure that when AUSSAT is in operation the necessary hardware and software will be available to subscribers.

As for Direct Satellite Broadcasting for viewers, I do think it is a little way off. It is estimated to be economically unviable at present. Several nations recently pulled out of the proposed European DSB project because of the high economic outlay. It is possible in the Northern Hemisphere to view Soviet TV programmes via the Orbita satellites that cover the vast expanses of the USSR. Intelsat has provided a relay of ABC TV programmes from Sydney and Perth for the remote areas of Australia. American cable, subscription and domestic networks are extensively sending programmes out linking up with their ground stations and are not designed for individual reception in the home. DSB may eventually become a reality yet could be rendered obsolete by more economic information technological systems.

Another item I found interesting, concerns cordless telephones. You may remember in an earlier column, I pointed out their proximity to the 160 metre band. Well, recently a lady in Woonsocket, Rhode Island accidentally was tuning across her domestic AM radio when she overheard telephone conversations concerning drug deals. She notified police, who themselves began to monitor the calls from the cordless phone. After six weeks of monitoring, a police raid resulted in nineteen people being arrested, including one police patrolman, on drug and other criminal charges. They claimed the ring was responsible for $20,000 worth of drug business a week.

Normally in America, there is a need for a court order for authority to conduct a wiretap or intercept, but in the case of this cordless telephone, because it was on a public frequency (that is the AM band), no such requirement was necessary. It was interesting that cordless phones are supposedly operating between 1690 and 1750 kHz but due to their popularity in the States, several have utilised spare channels in the local AM band. I am still concerned that they could conceivably plop on to the 160 metre amateur band. Several here in Launceston have at times come close to 1.8 MHz. If they do, I suggest that we report them to the Intruder Watch!

Well that is all for this month. Until next time, the best of 73's and good listening!

— Robin VK7RH

AR

NEW RADIO SOCIETY

A national amateur radio society has been formed in the Republic of Vanuatu.

The address of the society is Vanuatu Amateur Radio Society, PO Box 665, Port Vila.

It is expected that the VARS will apply for membership in the IARU.

From ARRL Letter 5th January, 1984

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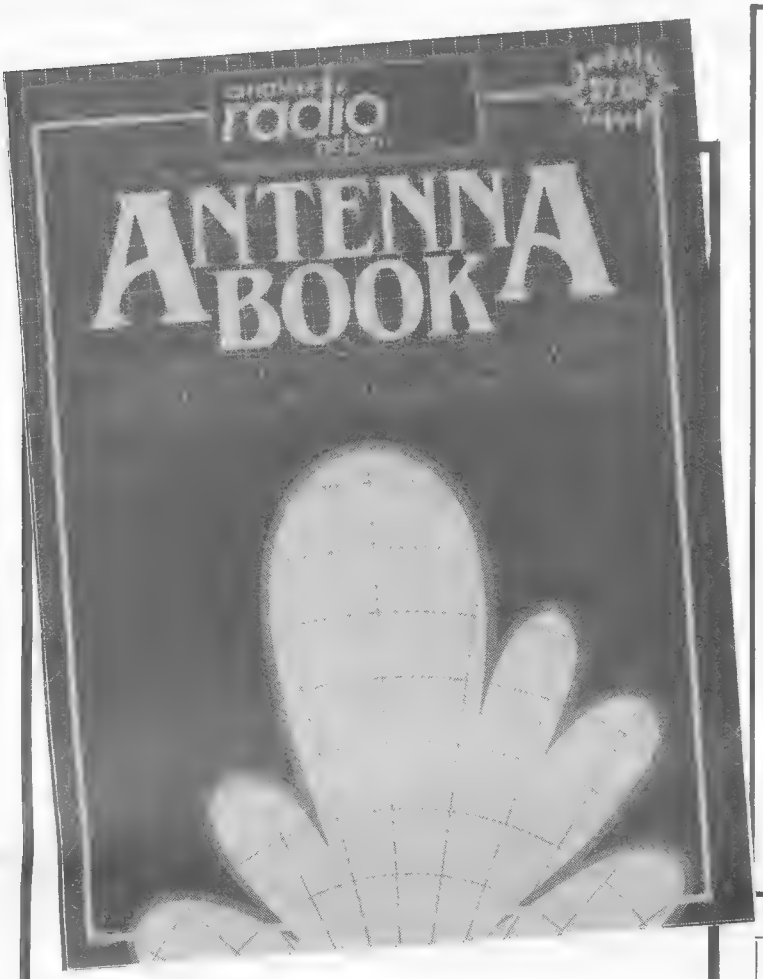

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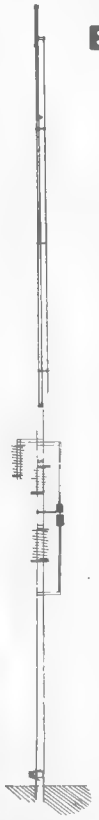

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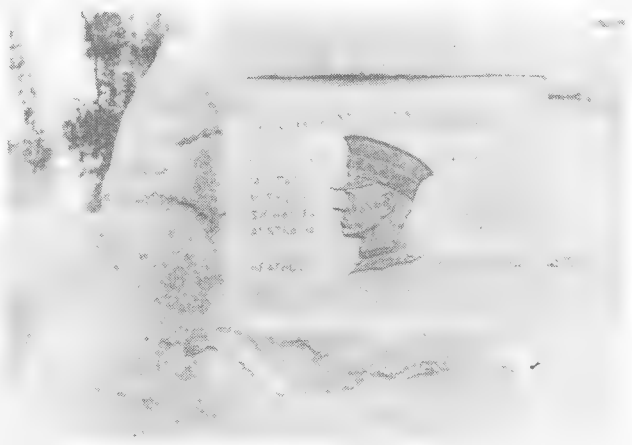
★ Patented device

See review in ARA – Vol 6, Issue 3

TRIBUTE TO WIRELESS



This Commemorative Tablet is located in Heathcote Park in NSW, and is a tribute to the first Military Wireless Signal in Australia. It was transmitted by Major George Augustine Taylor on 20th April 1911.

Contributed by Nev Shaw VK2FJ.

VK2 MINI BULLETIN

Jeff Pages, VK2BYY
VK2 MINI BULLETIN EDITOR
PO Box 1066, Parramatta, NSW 2150

Members are reminded that the Annual General Meeting of the Wireless Institute of Australia NSW Division will take place on Saturday the 31st of March at the Granville RSL Club, commencing at 2 pm. Notice of the meeting, together with ballot papers if required, is being sent to all members early in March. If you are unable to attend the meeting, make sure that you forward your proxy. A proxy form and instructions is included with the posting.

At the December Council meeting, Divisional Librarian Aub Topp VK2AXT presented his Article Index System. This system provides an index to technical articles published in amateur journals and will greatly enhance the value of the library. Council also recorded its thanks to George Trotter VK2AVY for his donation of Wireless World magazines, to Daphne Fenton VK2KDX for her donation of books and equipment from the estate of her late husband, Nev Fenton VK2ZBQ, and to John Knudsen for his donation of an SSR-1 general coverage receiver.

Fourteen applications for membership were accepted, and after much deliberation the placings in the Division's Homebrew Competition were decided. Council was most impressed by the high standard of entries. The awards will be presented at the Annual General Meeting.

Council acknowledges with gratitude that Stephen Pall VK2PS, Tim Mills VK2ZTM and Wally Watkins VK2DEW are continuing in 1984 as Federal and Alternate Federal Councillors respectively.

Considerable discussion took place regarding the deliberate interference to the Sydney 2 metre repeaters, particularly the Dural repeater. Council accepted the recommendation from the 9th Conference of Clubs to form a covert investigative team to assist the Department in identifying offenders, and a team co-ordinator was appointed. Council also resolved to step up its written protests to the Department of Communications, particularly with regard to interference to the broadcast callbacks. Individuals and clubs are urged to support the Division in this matter by advising the Department in writing of any interference, and to forward copies of such letters and any replies to the Division. The Department has requested that stations keep a written log of such interference, and tape recordings may also be of use.

The 10th Conference of Clubs will be held over the weekend of the 14th and 15th of April at Amateur Radio House. Agenda items for this Conference should be forwarded to the Divisional Office by the 9th of March. Agenda items for the Federal Convention will also be discussed by the Conference to assist the Federal Councillor in preparing for the Convention. Details regarding accommodation for country delegates will be circulated to affiliated clubs along with the agenda. As usual, those clubs attending should forward a list of all members, in alphabetical order, to allow the number of votes for each club to be determined.

It has been some time since an up-to-date list of broadcast frequencies has been published. The broadcasts originate from the Division's Dural station, VK2WI, each Sunday at 11 am and 7.30 pm local time, on 1.825 MHz, 3.595 MHz, 7.146 MHz (morning only), 28.32 MHz, 52.12 MHz, 52.525 MHz, 144.12 MHz, 147 MHz and 438.525 MHz, and are relayed onto 1812.5 kHz, and 3.585 MHz in Newcastle (morning only) and through repeaters VK2RDX (6650), VK2RAO (6700 — morning only), VK2RAG (6725), VK2RIC (6800 — morning only), VK2RCC (6800 — morning only), VK2RAW (6850) and VK2RTZ (7100 — morning only). If you would like to join the broadcast team either as an announcer or engineer then advise on the callbacks or contact the Divisional Office.

Material for inclusion in this column should be forwarded to the Divisional Office at PO Box 1066, Parramatta, NSW 2150.

73 from Jeff, VK2BYY
Minibulletin Editor.

AR

VK3 WIA NOTES

Jim Linton, VK3PC
Divisional President
Victorian Division
4 Ansett Cresent, Forest Hills, Vic 3131

Secretary, Wireless Institute, 412 Brunswick St, Fitzroy 3065, Victoria, Australia.

VIC DIV COUNCIL ELECTION

This is the time of year when those full members of the division thinking of joining the Victorian Division Council should act.

Nominations for Council close on 12 April — the Council has ten positions.

Intending councillors should be prepared to devote at least two years on Council serving the members and helping to administrate the running of the WIA in Victoria.

Sometimes this voluntary work can be time consuming with deadlines to meet — but most councillors consider their time on council to be personally rewarding.

Anyone considering seeking election to Council can speak to any of the current councillors about the operations of Council, or contact the Divisional Secretary, Ian Palmer VK3YIP for further details.

For those members not wanting to actually join Council, but willing to help it, there are a number of ex-officio positions now vacant.

These include Book Officer, Membership Co-ordinator, and National Parks Award Manager.

Country members can also play their part in helping run the WIA by joining their Zone Committee, or volunteer to assist the important work done by the Zones.

ZONE AND CLUB NET

This Sunday night 80 m net was revived last July with Marilyn Syme VK3DMS net controller and has proven to be a success.

It enables the interchange of news and ideas between the Zones and Clubs.

However there's been a poor attendance on the net by clubs, particularly those in the metropolitan area which is rather disappointing.

Perhaps club publicity officers could give a thought to coming up on the net with details of their club activities.

The net provides the only regular venue for the exchange of news and views between the Zones and Clubs — those who participate agree they benefit by taking part.

OVERSEAS MEMBERS

Your division has had applications for membership from radio amateurs in the USA, Nauru, Oman, UK, and South Africa.

If you have DX friends don't forget to invite them to join the world's oldest radio society — the Wireless Institute — through the Victorian Division.

Membership costs $35 (Australian) and gives overseas radio amateurs the Institute's monthly journal Amateur Radio magazine, free use of the VK3 QSL bureau, and makes them eligible for WIA awards including the Australian DXCC.

Applications should be sent to: *The Secretary, Wireless Institute, 412 Brunswick St, Fitzroy 3065, Victoria, Australia.*

FEDERAL CONVENTION

Next month sees the Annual WIA Federal Convention being held at the Brighton Savoy Hotel in the Melbourne bayside suburb of Brighton.

If proposed motions already circulated are an indication this year's convention will be very interesting.

Details of decisions made at the convention will be broadcast over VK3BWI.

Any Victorian Division member is welcome to visit the convention's open sessions to watch the procedings.

If you're thinking of attending it would be adviseable to let Federal Councillor Alan Nobel VK3BBM know of your intentions well in advance.

AR

TRIVIA

In Mildura there is a row of shops — an electronics business, a curtain shop, and a computer and business machine shop. Involved in these three businesses are a total of four amateurs all next door to each other! Wonder if this is some kind of fairly unusual occurrence?

AR

VK4 WIA NOTES

Bud Pounsett, VK4QY
Box 638, GPO, Brisbane, Qld 4001

1984 RADIO CLUB WORKSHOP

Next month we look forward to the ninth Radio Club Workshop. This is the annual weekend affair when delegates from clubs from all over the state get together. Delegates are able to put forward their ideas and views on how the Institute affairs and indeed, amateur radio should shape up in the coming twelve months.

The past eight Workshops have ironed out all the little problems and now, as in the past couple, we look forward to discussions of a broader nature. We are also planning to look inward. We will be asking successful, popular clubs, the secrets of their success. We are hoping that this will enable all delegates to pick up some new ideas to take back with them to their respective clubs.

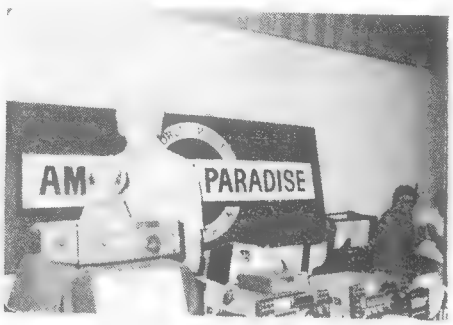
However, unless clubs have chosen their delegates carefully and briefed them well, the time and expense will be wasted. The expense is rather considerable, the division foots the bill for some very expensive airfares with members travelling in some instances, large distances. Past experience has shown that the Workshop is worth every cent.

So successful, in fact, that the VK2 and VK5 divisions have shown great interest in the organisation and running of this annual event, VK2 sending a councillor to sit in on the sessions. Our Federal Councillor and his assistant have been very well briefed at Federal Conventions and this is largely due to their attendance at the Workshop.

One of the activities of this weekend is to discuss the forthcoming Federal Convention motions so that the two Queensland delegates to that convention have an insight into how the majority of VK4 amateurs feel about these motions. This has apparently not gone unnoticed by other divisions.

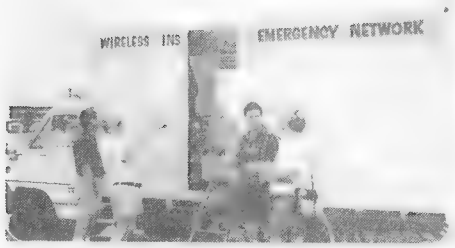
AR

Inside, many took the opportunity to meet old friends.



Presiding over his trade display was Ken, VK4KD, State WICEN Co-ordinator.

A couple of VK4 councillors pause to look at the camera, Bud, VK4QY (left) and John, VK4QA.



Outside the hall at Broadbeach for the Gold Coast Hamfest late last year, Fred, VK4AFJ, holds forth on WICEN to David, VK4AFA; Bill, VK4XZ; John, VK4QA.

Who pulled the ticket out of the bucket for the Resort Weekend Raffle? Anne Minter, VK4NRA. Whose winning ticket was it? Anne Minter's!!

QSP

DID YOU WORK W5LFL?

The first draft of the W5LFL log is presented in the ARRL Letter, 5th January, 1984.

Australian amateurs listed as Working Owen are VK's: 1BX, 1DF, 1ORR, 1RR, 1ZAH, 1ZIF, 1ZQR, 2KPG and 2PMN.

The list includes many American and Canadian stations with CE, D, EA, EI, F, G, GM, GN, HH, I, JY1, OE, OF, OH, OK, OZ, SM, TI, XE and YU also featuring.

AR

FIVE-EIGHTH WAVE

Jennifer Warrington, VK5ANW
59 Albert Street, Clarence Gardens, SA 5039

As this is my first column for the New Year (although it will be well into it by the time you are reading this) I will take this opportunity to wish you all a Happy New Year.

In November, at the same time and place as the Old Timers Lunch, a YL Get-Together was held for the XYLs of Old Timers and other interested YLs. It was so successful that it is planned to make it a regular event, so bear it in mind for yourself or your YL next November (see photo). Also successful, were the WIA Picnic and the Christmas Social, despite last minute changes to dates and venues. Our thanks to the many amateurs and their wives who helped at these events and in particular Wendy Clegg who organised the food for the Christmas social. Our thanks must also go to Wally Watkins VK2DEW and his XYL Dorothy for a most interesting talk, video and display on their trip to the Peoples' Republic of China.

On Sunday, 29th January The Lower Eyre Peninsular ARC officially opened their new club rooms. Official visitors included Mr Peter Blacker, MP, Mr Tom Secher, Mayor of Port Lincoln; Mr Bill Wardrop VK5AWM VK5 Divisional President and Mr John Mitchell VK5JM, State WICEN Director. I hope that many of you managed to work VK5ALE for the Matthew Flinders Award. Our congratulations and good wishes to the members of LEPARC.

We hope that the members of WICEN won't be needed for any bushfires this year but many of them and other volunteers will be getting plenty of message-handling practice between 18th February and 9th March when they will be providing communications for the Olympic Yachting Trials being held off North Arm. If this is the first you've heard about it and you want to help, contact Joy VK5YJ. Communications by WICEN will also be provided for a Car Rally at Eudunda on 28th April, contact John VK5JM for details.

That date is also in the middle of the Federal Convention weekend and as you are reading this it will just about be the deadline for Agenda Items, however if you have something desperate that you want brought up, give me a ring and we'll discuss it.

The WIA Bridging Course started in February but there may still be a few vacancies for those who wanted to up-grade this year. The Novice Course starts in May and it wouldn't hurt to get your name in early. Both Courses are $36 for twenty four weeks (two hours per week) and further information can be obtained from Roland VK5OU or via PO Box 1234, Adelaide, 5001.

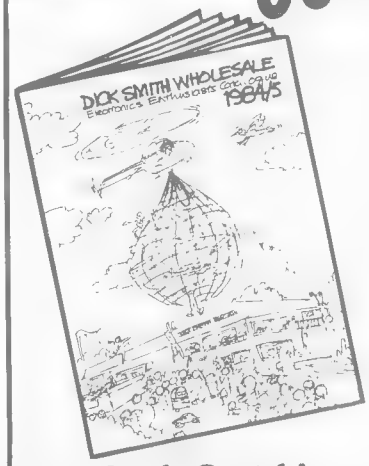
Diary Dates

27th March WIA monthly meeting
13-15th April Convention of Clubs at O'Sullivans Beach
24th April WIA AGM

AR

L to R Brenda Ring, XYL of VK5KH, Betty Haseldine, XYL VK5BD, Thelma Luxon, XYL VK5RX, Rae Vivian, XYL VK5FO, Joy Charles VK5YJ, Eunice Bowman, XYL VK5FM and Marlene Austin VK5QO.

DON'T MISS OUT!



Dick Smith's all- new 1984 SUPER CATALOGUE

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in the April issues of Electronics Australia and Electronics Today International

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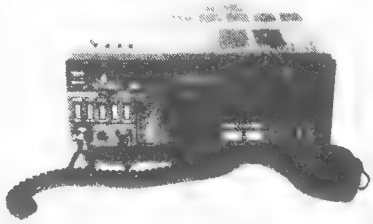

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LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

Re NARROW BANDWIDTH GENTLEMAN'S AGREEMENT

I urge all CW operators who regard themselves as sufficiently capable of successfully working the low end of the bands to re-read the Letter to the Editor AR November 1983 by Drew Diamond VK3XU. In it he expresses apprehension at the policy adopted by the WIA re NB (Narrow Bandwidth). This decision, taken and made official largely by stealth, allows the indiscriminate mixing of RTTY type transmissions and A1 mode in that space traditionally used for CW, since amateur radio first promulgated a band plan, by top class operators the world over.

Firstly: This decision was taken by a group who by and large seldom have and probably could not operate A1 mode efficiently in this section of the bands eg 14.000-14.050 MHz. I use this segment daily and their calls are noticeable by their absence. Consequently, they simply could not understand the incompatibility caused by the intrusion of RTTY type emissions.

Secondly: The decision to allow the mixing of RTTY and CW, here in VK, puts us out of step with many other band plans elsewhere in the world.

Thirdly: All those top class operators with whom I have raised the NB 'Gentlemen's Agreement' question, both here and overseas, are dead against it. An FOC spokesman for VK4 has expressed opposition to it. Even more incomprehensible and incredible is the admission of a top WIA Official, who informed me that the Executive knew that the CW fraternity would be dead against it. Apparently, the Executive has no interest in preserving and promoting brasspounders rights.

The A1 mode DX scene on the low end is a fast-moving and fast-QSYing activity where Break-in is almost a MUST; stations are regularly broken, or break each other for a variety of reasons. It is also the habitat of the DXpeditioner, who raises huge pile-ups — often two or three operating at the one time between 14.010 and 14.030 MHz.

The incompatibility between RTTY and CW is plain and simple:

1. It's not possible for a CW operator to break a RTTY station and ask for a quick QSY.
2. Callsigns are seldom given.
3. A RTTY DX QSO appears to take much longer than a ten second CW contact.

I recently encountered three such stations operating between 14.020 and 14.040 MHz; their signals were S9+ and very little space was left between them for CW. I had hoped they were commercial but experience told me they were amateur. They were breaking up several exotic DX stations — the kind not likely to be heard again in years. I tried to break each in turn — no response. (The usual RTTY segment between 14.070 and 14.100 was completely vacant of signals at the time.) It was twenty minutes before these stations finally disappeared, with no plain code callsigns given — and this, according to those who introduced this ill-conceived policy, is supposed to be a 'Gentleman's Agreement'.

I unequivocally back Drew Diamond VK3XU and I ask the same questions as he does. Like VK3XU, I cannot see the present need for change, as the frequencies between 14.070 and 14.100 are full of spaces, whereas half the smart CW operators in the world are all vying for the already cramped space in the low 50 kcs.

The WIA Executive argument for taking this decision will most likely be that the subject has already been raised in 'AR' and it is a plan for the future. If this is the case, then let acceptable evidence be produced that RTTY-type mode will predominate in the next 10-20 years. The trend in the next decade will quite likely be towards more RTTY — but who can say that A1 mode won't increase either. The present ratio of the former to the latter is very very fractional indeed. If A1 mode is killed, it will be done by those at the top, simply because the universal administrators don't understand what professional code is, or is all about — and in some cases would wish to write it off. With 'appliance plug-in operation' (RTTY now included), amateur radio is fast losing its reputation for skill and talent and this parochially taken Narrow Bandwidth 'Gentleman's Agreement' will surely down-grade CW.

Alan Shawsmith, VK4SS
35 Whynot St, West End
Qld 4101

Editors Note: This letter has been edited. In view of the interest to many operators it has not been reduced in length significantly. However any further letters will be edited in areas which cover points already raised.

AR

REMEMBRANCE DAY CONTEST

As a participant since 1977 and a CW operator using both modes, I found that I only had two CW contacts on 15 metres and none on 10 metres during last years contest. We must try and entice more CW operators to use these two bands, so why not ask the Contest Manager to specify that all CW contacts be between 21.125 and 21.150, 28.100 to 28.110 MHz. This would ease the burden of a CW operator to listen and call all over our allotted CW bands. The beacons in VK2, VK5 and VK6 tell us when 10 metres is open, so no reason for no contacts. The points scoring on CW does not entice anyone to waste time on this mode either, as it now stands.

As a war radio op, with my mates name Graham Phillips VK5BW on that trophy, I deplore the rules as they now stand.

I quote, "This contest is held to commemorate those amateurs who died during the Second World War, and is designed to encourage friendly participation between all amateurs and to HELP IN THE IMPROVEMENT OF OPERATING SKILLS of all participants" unquote. Surely does a contact between two full and/or K Call operators every hour on 2 metres live up to the last part of that quote. I request that they should only be allowed on HF, showing their efficient equipment, antennas and operating skills, as they change from band to band; also with more of these operators on 10 and 15 metres, the monotony of the continual dial twisting, only to hear the same callsigns all the time on Sunday would be eased quite a bit.

Lindsay Collins, VK5GZ
12 Park Ave
Rosslyn Park, SA 5072

Editor's Note:

The Rememberance Day Contest rules are the responsibility of the Federal Contest Manager.

AR

VK5REP AT COWELL DOES A GOOD JOB

ON 25.12.83 at 14.20 hrs K, I was about to call Sydney via VK2RLE Ch 4 repeater when surprisingly I heard VK2BOT at Taree, about 50 miles south of Port Macquarie, working Ron VK5ZLJ at Wallaroo in Spencer's Gulf. It was hard to believe but there was no doubt when the VK5REP ident came back loud and clear. I then called VK5ZLJ and signals were 5/9 both ways, Dick VK2BOT and I then had a three way contact with Ron via VK5REP which entailed a return path of approximately three thousand miles from Port Macquarie and back. Our QSO lasted about twenty minutes. Ron mentioned that he was receiving my sigs direct so we then had a simplex contact with signals still at about 5/9 both ways. My transmission was by 25 watts into two six element quads at 60 ft. Dick was using specially designed yagi. What was Ron using? I am sure you are asking, well, be prepared to faint: Ron VK5ZLJ was using 7 watts into a five-eighth antenna mounted on his car roof — and wait for it, the car was parked inside a large tin shed!!

Luckily VK2RLE was not activated so there was no QRM from Sydney.

Our Congratulations must go to all those who worked to set up that lonely little repeater out at Cowell and to Brian Warman for his excellent article in Jan, AR.

Lewis W P Smith, VK2LS
30 Cunning St
Port Macquarie, NSW 2444

AR

MEANINGLESS LETTERS

May I draw your attention to the "WIA News" on page 6 of the January issue of AR.

The first column is understandable, but the rest becomes meaningless unless you happen to know the meaning of FACTS, SBS, DRAFT, BC 83/11/4, FARB and ABT!!!

WIA and DOC I understand, and they are spelled out in full in the first paragraph, but the rest is simply an annoying garble.

Sincerely,

Chris Whitehorn, VK5PN
14 Rex Avenue
Klemzig 5087

Editor's Note:

Point taken —
FACTS — Federation of Australian Commercial Television Stations.
SBS — Special Broadcasting Service.
FARB — Federation of Australian Broadcasters.
DRAFT — Document, preliminary version of document.
ABT — Australian Broadcasting Tribunal.

AR

PACIFIC AMATEURS

Your article in January's AR in reference to VK3VU's trip to Tonga also the assistance given to A35RF by the Ballarat Amateur Radio Group has prompted me in writing about a trip I did on the TSS FAIRSTAR through the Pacific last August.

Having gained my Novice Call in November of 1982 I thought it would be nice to do a tour of the Pacific, also to contact as many radio amateurs as possible, so went ahead and booked two tours.

At Nuku'alofa in Tonga I met the XYL of John A35JL who drove me around this beautiful island and later met John himself.

He is doing an amazing job there instructing the youngsters in amateur radio in regard to them obtaining their Certificates of Proficiency, also building an Emergency Net-Work for the island group as the hurricanes there tend to flatten the place.

Seeing he is so many thousands of kilometres from any supply house I made the casual inquiry to whether he was in need of any equipment, to this he mentioned finals for a 101 also a turns counter. I said don't worry as they will be on the next available aircraft when I return to Australia.

Being a firm believer in the amateur spirit, that is to assist your fellow amateur if it is humanly possible the goods were forwarded by a firm in Sydney to Nuku'alofa so A35JL, John is operational on his FT-101.

Since, we have had a contact on fifteen metres also exchanged QSL cards, so it was gratifying to

hear that the goods had arrived safely.

At Espiritu Santo I met YJ8TT, Augustin Cheung who drove me out to his QTH where I met his XYL. He is very active on RTTY also on the FT-707. Whilst there we enjoyed a cold can of Fosters, certainly gets warm in this part of the globe.

In Pago Pago I had quite a chat with Larry Gomez, KS6DV on the 600 ohm wire. Unfortunately his place of employment is quite some distance from the harbour, though we intend to have a QSO in the near future.

At Honiara in Guadalcanal I found H44KC, Ken Chan who made me very welcome, H44MB, Michael Barrett from Australia who is stationed there with XYL and family, wherever one travels the mention of being a radio amateur opens all doors, the hospitality is out of this world especially in the Pacific area.

Whilst at Suva in Fiji I approached the Department of Telecom regarding coming there for a holiday and setting up a station in a hotel room, they in turn made me welcome and were very helpful in giving me all the information that I require.

Everywhere I was treated with the utmost courtesy, also the hospitality was something one dreams of, never see it in reality, the amateur spirit really prevails here in this part of the world.

It was a fantastic trip and I certainly achieved everything I set out to do.

Graham Millard, VK6NUJ
Unit 19, 64 Hastings Street
Scarborough, WA 6019

AR

HEARD ISLAND

I read with interest VK3YJ's calculations on the cost of a Heard Island QSO (Jan 1984). The 30 000 QSOs by VK0HI/CW is calculated at $5 plus @ piece = $150 000 plus. In the same issue a "consolidated financial report" from the VK6 DX Chasers Club puts the expenditure to $38 000 plus. I don't make that $5 per QSO, sorry!

Heard Island Expedition (HIE) who chartered the Anaconda II is a registered business company whose total expenditure on the Heard Island venture may have approached $200 000, but that had nothing to do with amateur radio. Only donations from radio amateurs and associated income like QSL returns need be considered as we are talking about a "purely amateur basis". Let us include the 149 amateurs and listeners who paid membership fee to HIE of $25 each = $3725 even if this amount apparently did not go towards the amateur radio element of the expedition. Even so the cost is $1 plus per QSO.

The same applies to HIDXA's expedition. With only 14 000 QSOs the cost to the amateur radio community was similar per QSO. The rest of the expense was born by the expeditioners on a private basis and need not concern us here.

A lot has been written about the tremendous profits and good times had by DX peditions. Some of those writers ought to try it for themselves, not just grumble about it.

The cost of chartering a vessel for several weeks, provide fuel, equipment and food for a number of people and be away from one's place of work on an extended holiday without pay, would make those who continuously gripe and whinge about the cost of 2IRCs or a green stamp, blanch! 73

Kirsti Jenkins-Smith
PO Box 90
Norfolk Island, 2899

AR

EXAMPLE TO NEWCOMERS

I wish the Institute a Prosperous New year, and trust the log summary may be of interest to someone.

Summary of long distance contacts using antenna of 132 feet.

The aerial was erected on 23.6.83 and up to and including 20.12.83, the station was active on 103 days.

Excluding contacts with Australia, Tasmania and New Zealand, 345 contacts were made, and 31 countries contacted.

North America was contacted on 116 occasions, Germany 31, Canada 25, France 20 and Italy and England on 17 occasions.

The input power to the transmitter was usually 50 watts with 75 watts maximum power.

This is my fifty eighth year on the air and I have nearly always used that aerial for amateur work.

Sincerely,

Norman Richardson, VK4BHJ
1069 South Pine Road
Everton Hill, 4053

Editor's Note:

This is an example for newcomers of what can be achieved with a modest station.

AR

NEW NOVICE

As a new member of the Amateur Fraternity I would like to say thanks to all those who helped me in achieving my Novice call. Not many people would stand there calmly at their door while I commented, "I see you have an amateur antenna; do you mind if I ask you a few questions?"

Special thanks to the WIA. If the person I called didn't know what I wanted he could certainly put me on to someone who could help.

Do you print an index of AR articles? As you can understand I'm trying to research various articles of special interest, ie, antennas, building simple equipment, and others particular to the Novice. I have access to AR back copies but an index would be particularly helpful.

I feel the welcome and appreciate it.

Ken Purnell, VK5PKP
103 Myrtle Rd
Seacliff, SA 5049

Editor's Note:

A five year index of Technical Articles is published. Last one was in 1980. Next one is in 1985.

AR

GENERAL COVERAGE SWLING

Since I have obtained a transceiver with a general coverage receiver, I have become more interested in listening to shortwave broadcasting stations, and find the regular column by VK7RH informative and useful.

One problem, though, is finding the stations at the beginning of each new listening period. Therefore, I would like to make a suggestion and a request: Could AR publish the frequency schedules of short wave stations, particularly the more popular ones? (My choice would be for Radio Australia, BBC and Voice of America, but I realise that other readers would have their own preferences.) With more and more of the current generation of transceivers having general coverage receivers, there are more readers with access to these frequencies, now, than previously.

It seems to me that this could be done in one of two ways. Either as paid advertisements by the broadcasters (as the BBC did earlier in 1983) or by reproducing the material, which would probably be supplied gratis by the broadcaster if asked, within the body of the magazine. Both ways have their advantages and disadvantages, but my preference would be for the first method, particularly as it would generate advertising revenue for the magazine.

I welcome your comments regarding this suggestion.

Thank you, both you and your staff, for a fine magazine each month (I meant to write something like this after the October Jubilee issue but did not quite get pen to paper).

M G McCulloch, VK2BMZ
6/10 Forest Grove,
Epping, NSW 2121

AR

AMATEUR IN SPACE

During the 'Amateur in Space' experiment on board STS9, Martin, VK4ZIL and myself, computed the passes in range of Brisbane and the Gold Coast, in order to give local amateurs the times, azimuth and elevation needed for a STS9 contact.

The region three frequencies for uplink and downlink were broadcast on local repeaters, together with all times, etc for contacting W5LFL on board the space shuttle.

The results of this broadcast information had to be heard to be believed!

There were countless local QSO's and unidentified carriers to be heard on 145.550 MHz. During the in range times for STS9, some were even calling W5LFL on the downlink frequencies and one station was heard to tell W5LFL that he had a very weak signal, long after LOS, the shuttle was 9000 km away at the time-not bad for a device orbiting about 250 km high!

If W5LFL had indeed called from the shuttle, he would have had trouble being heard above the QRM. One wonders what chaos would have been caused if he had called 'CQ' from STS9.

Our expensive telephone calls each day, in order to obtain the latest STS9 elements for computing local AOS and LOS times only resulted in the fools being able to carry on and QRM the downlink frequencies with much more accuracy.

The proliferation of 'experts' in the field of orbital mechanics had to be heard to be believed!

What a disgusting mess of the 'Amateur in Space' experiment was made by people who are supposed to be involved in 'State of the Art' technology.

I suggest to others who are able to compute tracking data for the next mission that they only give same to selected amateurs, via the land line. If the data is broadcast, the same fools will do the same things and ruin the experiment for the others . . . again.

Charlie Rufus, VK4UQ
Wilson Road,
Mt Tamborine
Queensland 4272

AR

VIABLE ALTERNATIVE

Recent letters in our magazine have been suggesting additional frequency priviledges for novice license holders. May I suggest a viable alternative! By attaining full call status you have access to all amateur bands! This idea is not as ridiculous as it may seem, because the Morse requirement is only a bit faster, and the theory is also only a step further.

When you aquire full call, you have not arrived at the ultimate goal, only rather having taken one more step in that direction. After this step you are set to increase Morse speed to any desired level, and continue to learn about our hobby.

Frank Kratochvill, VK6DM
RMB 9021 South Coast Highway,
Albany, Western Australia 6330

AR

TECHNICAL LETTER

Thank you for publishing my circuit of the alignment oscillator for 455 kHz in the January 1984 issue of AR, page 23.

I wish to point out that the emitter resistor shown as 3.3 on the diagram should in fact be 3.3 k,

Yours faithfully,

J A Heath VK2DVH
12 Wilga St, Blacktown 2148

AR

TECHNICAL LETTER

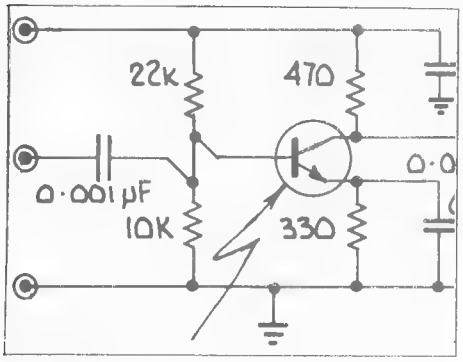
Thank you for printing my article on "Ladder Crystal Fillers" in January 1984 AR.

There is regrettably an error — the drawing shows a NPN transister, but it is "upside down" and may not work as well as it should!

Circuit should read:

continued

from previous page.



ARROW ON CORRECT ELEMENT.

Rob Gurr, VK5RG
PO Box 35,
Daw Park, SA 5041

AR

QSP

TEN YEAR LICENCES

The FCC has commenced issuing ten year amateur licences. The new licences will begin only when a licence is renewed or modified.

New, first time licences issued will now be for a ten year licence term

From ARRL Letter — 5th January, 1984

AR

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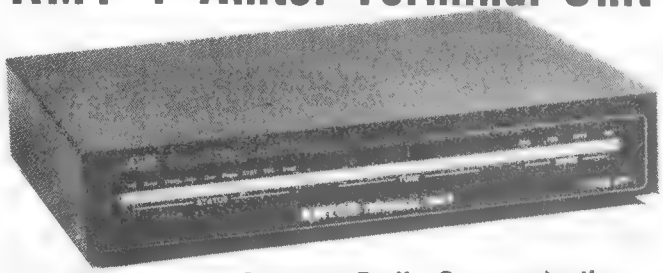

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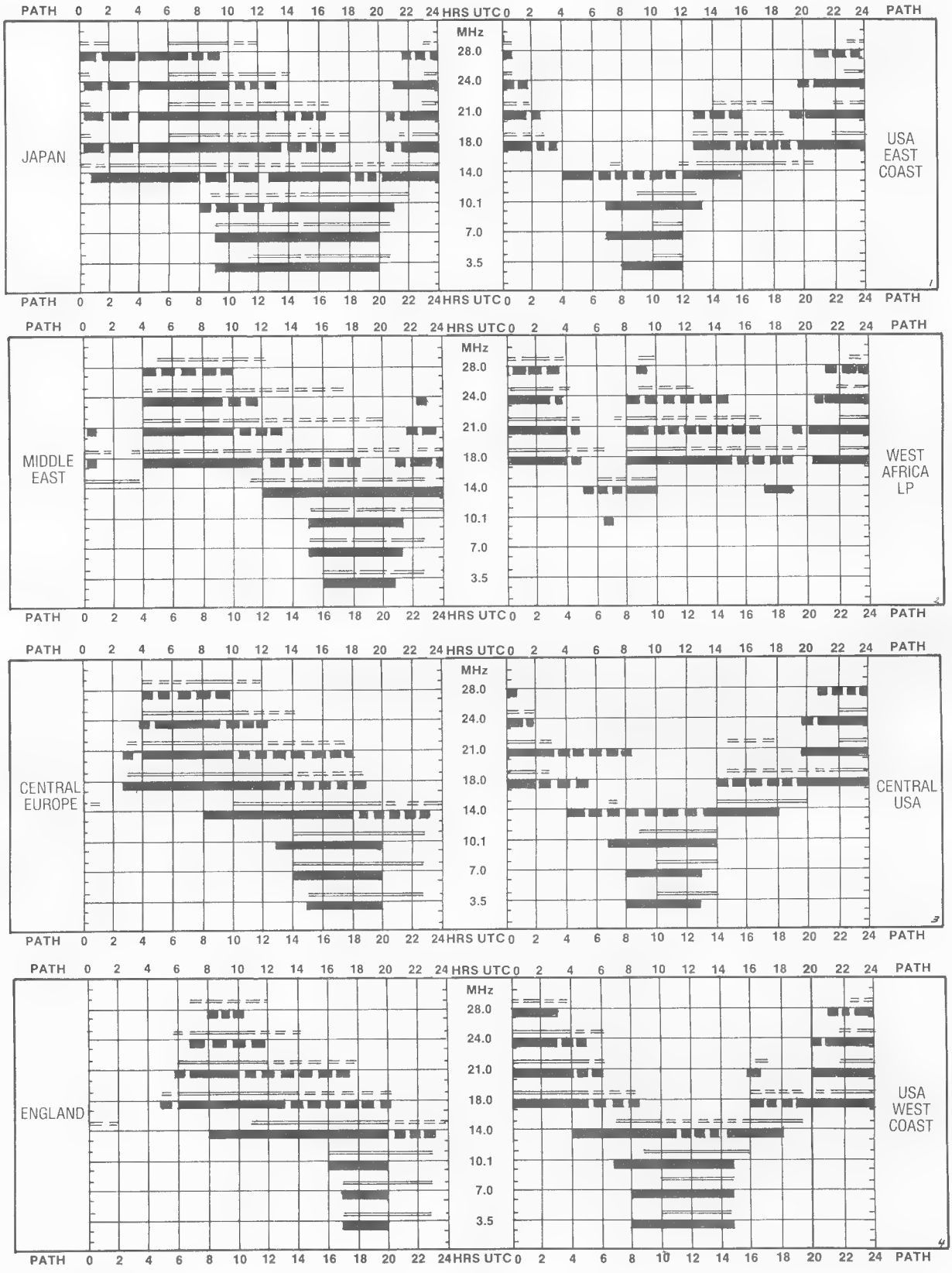
IF YOU ARE INTERESTED AND THINK THE YRCS CAN HELP YOU, SEND A SAE TO ROY HARTKOPF, VK3AOH, QTHR OR IF YOU KNOW OF ANY SCHOOL OR OTHER GROUPS, PLEASE PASS THIS INFORMATION ON.

IONOSPHERIC PREDICTIONS

Len Poynter VK3BYE

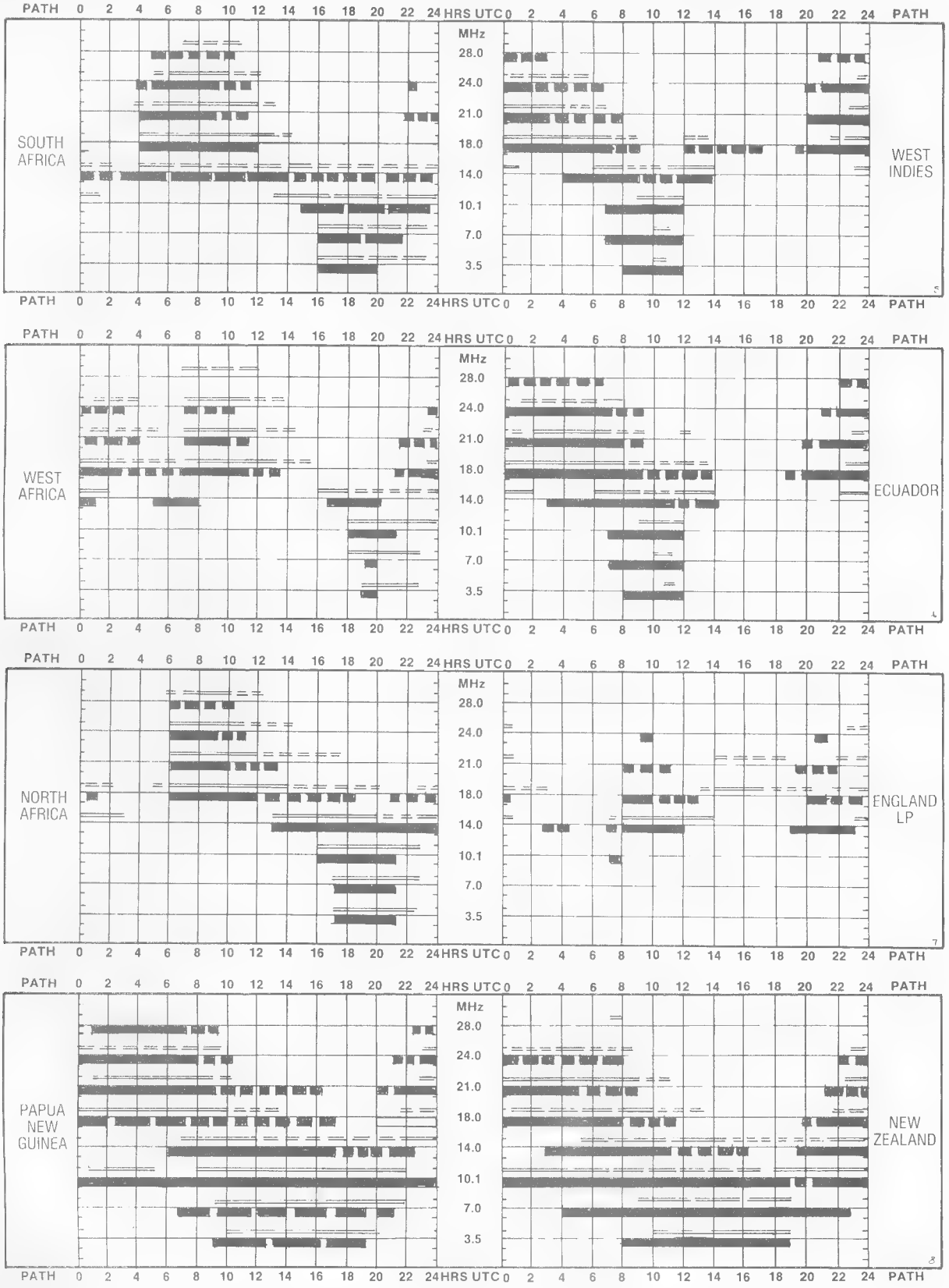


LEGEND

From West Australia

From East Australia

Better than 50% of the month, but not every day



Predictions courtesy Department of Science and Environment IPS Sydney. All times in UTC.

Less than 50% of the month

PATHS — Unless otherwise indicated (ie LP = Long Path) all paths are Short Path.

Obituaries

"MAC" McGRATH VK4ALP

Arthur James (Jim or Mac to the many who knew him) McGrath, ceased sending messages on 22nd December, 1983. Jim, although a starter in amateur radio at a later stage of his life was born in Christchurch, NZ on 1st July, 1914 and entered as a member of the amateur radio "fraternity" in 1954 in Auckland as ZL1APD using a home brew rig with push-pull 807s as output.

After many contacts and with the knowledge gleaned from them he purchased a Yaesu F101-B which he then used to his last contact. His brother Dick ZL3KE was also supportive in all aspects of his radio operations.

In 1975 Mac's wife Jenny, who was also heard on the waves, passed on and within twelve months Mac came to Australia to be with both his sons who were living here. He quickly established himself at Bilpin NSW in the Blue Mountains and became a foundation member and Chapter Head of the Blue Mountain Lagoon 10 m network VK2APD.

In 1980 Mac moved to Gladstone Qld to help his son Pat set up a promising business in Tannum Sands but his own main interest stayed with the amateurs which he again rejoined on establishment in Queensland as VK4ALP.

Mac is survived by sons Trevor and Pat and their families to whom we extend our sympathy.

VK2VB

AR

COLWYN LESLIE BISHOP VK5CY

It is with deep regret that I report that Col became a Silent Key on 30th December, 1983, aged sixty eight years after a short stay in hospital.

Col was always a keen radio man. In his early life he built Crystal sets, repaired and built receivers and after World War II along with XYL Ethel, set up a very successful Electronics business in Balaklava. Around 1947 Col gained his amateur licence and became VK5CY.

During his lifetime he had very keenly tutored others in radio, many of whom became licensed amateurs. I for one am very indebted to Col, as with much patience and persistence, I gained my full call in 1972.

Col enjoyed fifteen years of retirement, touring Australia in his caravan, and sometimes found it hard to keep skeds, especially without a tree from which to throw up a dipole. True to the amateur ranks, he enjoyed experimenting and rag chewing. He was a keen homebrewer, until the latter years when the duck-talk took over. During my association with Col, and since receiving my licence, I have spent some very enjoyable times on amateur radio. May I, together with my family and all who knew Col express our deepest sympathy to Ethel.

Lorraine VK5LM

AR

ARTHUR MORRIS SMITH

Arthur, who died suddenly at his daughter's home at Chester Hill NSW at the age of sixty seven, passed the AOCP exam last August. (first attempt).

He received his certificate in November but had not applied for a call when he died on 5th January.

I first met Arthur at Radio School Richmond in 1942 where we both passed out as Radar Mechanics, and subsequently served together on several Radar Stations in the Darwin area.

In 1943 Madge his wife presented him with twins, Elaine and Les. Les is active on the bands as VK2ELS and was instrumental in talking Arthur into taking his AOCP exam.

Arthur joined Telecom in 1948 and retired in 1977 as Officer-in-Charge, South Strathfield Exchange.

In 1967 his wife Madge died as the result of a car accident, a tragic loss from which he never fully recovered.

To his children Les and Elaine and grandchildren Julie, Sharon and Mark we extend our sincere sympathy.

Keith VK5KH

AR

FRANK O'DWYER VK3OF

16 MAR 1909 - 9 DEC 1983

After leaving school, Frank worked for a carrying company whilst he studied accountancy and other subjects at the Working Man's College, now the Royal Melbourne Institute of Technology. He joined the Royal Australian Naval Reserve on 30th November, 1929 as a Leading Telegraphist (RANR).

His Amateur Operator's Certificate of Proficiency (No 880) is dated 27th January, 1932, which was passed without examination because of credits from the WMC. A station licence under the call-sign VK3OF was issued on 29th June, 1933 and he was then active until closed down by WW2.

Frank was an unusual young man even then, busy with his work, his study and his hobbies of Wireless and the RANR. He was promoted Acting Petty Officer Telegraphist (RANR) on 19th September, 1933, but, his wireless history sheet shows, he did not obtain his Wireless Telegraphist Third Class (WT3); the qualification normally required for promotion to Leading Telegraphist (RANR) until 15th December, 1939.

He volunteered for full-time service in the Royal Australian Navy on 3rd September, 1939 and was accepted into the service as a Petty Officer Telegraphist. He spent the early years of the war at HMAS Cerebus (Flinders Naval Depot) as a PO Instructor in the Signal School and passed his Wireless Telegraphist Second Class (WT2) on 7th June, 1940.

It was at the Signal School that I first met Frank when I went there to do my WT2 course in 1942. He had the happy knack of being able to make others feel instantly "at home" with him and he could correct the mistakes of others in a quiet but positive manner making them feel he had done them a favour.

Frank went to sea in HMAS Australia on 19th January, 1943 as a PO Tel and served in that rank until promoted CPO on 1st October, 1944. HMAS Australia was "flagship" during most of the war and although there were Warrant Officers on the Admiral's staff for Signals and Wireless Telegraphy the CPO Tel was responsible for the day to day organisation of some thirty men. Frank left the Navy on 25th March, 1946 to resume his civilian career in the business his wife Dorothy had begun in 1935 and which continued until 1971.

After the war Frank resumed his amateur activity as VK3OF, being most active on 14 MHz CW to which he was faithful until his departure to that "Great Amateur Shack" in the sky.

He is remembered fondly by his friends and is survived by his widow, Dorothy and daughters Dorothy and Frances. I am told there is also a grandson of fifteen who wishes to become an amateur and put VK3OF back on the air.

Sid Clark VK3ASC AR

CHALMERS STROMBERG W4WLX

Many VKs will be deeply saddened by the passing of "Strom" as he was affectionately known to many hundreds of VKs and ZLs. He was widely known and had many regular daily contacts in this part of the world especially.

He had a dynamic and pleasant personality, a terrific memory for names, he would readily recognise on contact, and he was a great believer in the novice cause and his encouragement certainly did inspire many new amateurs.

In 1982 he had planned to visit ZL and then on to VK land just to meet all his contacts, intending to spend three months in Australia. Preliminary travel arrangements to interstate as a VIP had been arranged, and he was delighted by the invitation to be guest of St George Amateur Radio Society to meet some of his contacts and speak about Amateur Action USA.

Regretfully his plans had to be cancelled because of his commitments to the rebuilding of a new TV station for whom he worked as Broadcast Engineer. He had been promoted to manager of development and technical planning. I feel this and long hours took toll on his health. He was hospitalised by a stroke. Was off air for some time but had recovered by December 1982, my last contact. However, Cathy VK2VAS, a very close friend of Strom, was in contact July '83 before he passed away sometime between July and September 1983.

He was President of the Orlando Radio Club, Chairman QCWA Citrus Chapter Orange County, Broadcast Engineer TV Station Orlando, a member Central Florida Chapter of Society of Broadcast Engineers.

I had many enjoyable QSOs with Strom over several years, and will always be grateful for the privilege and richer in memory, to have been one of his many friends in the Amateur Radio World.

I mourn his passing deeply. Vale Strom. We extend our deepest sympathy to his wife and family.

Jim McLeod VK2VQ

AR

GUSTAV ACKERMANN DJ3YW

Gus passed away on 26th October 83. He was well known to many Australians — particularly VK7s.

He had worked seventy eight Tasmanian stations and was the proud possessor of the Tasmanian Devil Award, No 5.

Gus and his XYL Ruth visited Tasmania during February-March 1983, during which time he met many of the amateur friends he had met on the air.

In true amateur spirit Gus was always ready to give a helping hand and his voice will be sadly missed on the bands.

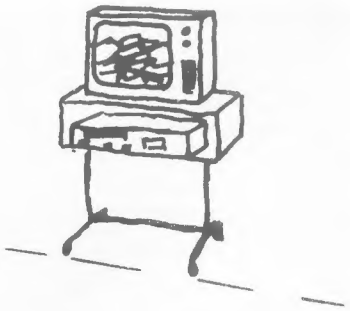
Ken Hancock, VK7KH

AR

Silent Keys

It is with deep regret we record the passing of —

MR ERIC CHARLES MEDHURST
VK2FG



A Message from the National EMC Advisory Service:

"The incidence of interference which is shown to be directly attributable to faulty amateur equipment is very low: Indicating that today's modern-design amateur equipment has a very clean and low harmonic output. Most of us would say, therefore, we don't need a low pass filter. Indeed! 'If there are no harmonics or undesired emissions — we can't filter them'... Yes! 'Correct technically but not psychologically.' A complaint of interference can arrive unannounced at any time, and a Low Pass Filter not only makes a good 'insurance policy' but also illustrates to a DOC inspecting officer that you are taking every precaution to ensure that your signal remains clean at all times.

"Those of us who run only 'bare-foot' power have no real 'official' need to possess accurate instrumentation to measure the transmitter output power — the power transistors or tubes speak for themselves. Not so when using equipment (a linear, for example) which can run the legal limit, or more. If you use transmitting equipment capable of operating near or above the legal power limit, it is MANDATORY to possess an accurate, working, DOC approved RF power measuring device for the mode of emmission in use. Again, a complaint of interference can arrive unannounced at any time. . . 'Don't be caught short by DOC — it's not good for your public image.' And, hiding the linear amplifier away before an inspection is, in the long term, 'cutting your own throat' because your station will not be cleared at full power, which is the way you will want to use it. More important, the other parties equipment will not be tested for susceptibility at the power level you desire, and are licensed to use."

AR

ADVANCED ELECTRONIC APPLICATIONS

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NOTICE

All copy for inclusion in May 1984 Amateur Radio must arrive at Box 300, Caulfield South, 3162 no later than 23rd March.

HAMADS

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*** Please insert STD code with phone numbers when you advertise.**

- Eight lines free to all WIA members. $9 per 10 words minimum for non-members.
- Copy in typescript please or in block letters double spaced to PO Box 300, Caulfield South 3162.
- Repeats may be charged at full rates.
- QTHR means address is correct as set out in the WIA current Call Book.

Ordinary Hamads submitted from members who are deemed to be in the general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being resold for merchandising purposes.

TRADE HAMADS

Conditions for commercial advertising are as follows: The rate is $15 for four lines, plus $2 per line (or part thereof) minimum charge $15 pre-payable. Copy is required by the deadline as stated below indexes on page 1.

AMIDON FERROMAGNETIC CORES: Large range for all receiver and transmitter applications. For data and price list send 105 x 220 SASE TO: RJ & US IMPORTS, Box 157, Mortdale, NSW 2223. (No enquiries at office: 11 Macken Street, Oakley, 2223).

WANTED — ACT

VALVES. Any or all of the following needed. 6AU6, 6AZ8, 6BN8, 6CL6, 6DC6, 6EB8, 6U8, 12AT7. Please state condition and price to Dan VK1ST QTHR. Ph: (062) 58 5664.

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ANY INFORMATION & circuits for the following. Eddystone rx Mod 750 & 770U/2, US Sig Corp Panor adaptor BC1031A. Hallicrafter txcvr Mod SR150. Kurt Reichstadter, VK2KBG, 36 Burgess St, Kogarah. NSW 2217.

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KENWOOD TS130V details and price to VK3CCE QTHR. Ph: (03) 509 1720.

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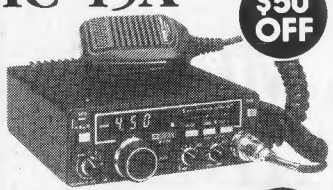

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